

DET TEKNISK-NATURVITSKAPLEGE FAKULTET

MASTEROPPGÅVE

Studieprogram/spesialisering:	
Indistriell økonomi / Risikoanalyse	Høstsemester, 2014
Indistricti gkonomi / Kisikoanaryse	
	Konfidensiell
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Retificial (iii).	
Tittel på masteroppgåva: Shipping and Valuation of Tanker Invo	estments Ltd.
Engelsk tittel: Shipping and Valuation of Tanker Investments Lto	d.
Studiepoeng: 30	
Emneord:	
Emileord.	Sidetal: 74 sider + Vedlegg: 24sider
Cycles	
Market volatility Shipping,	Stavanger 14.10.2014
Tanker Investments Ltd.	Stavaliger 14.10.2014
Stocks	
Tanker	
Valuation	

Executive Summary

This dissertation is an analysis of the shipping sector and valuation of Tanker Investments Ltd. The information the paper is based upon is publically available information and market sentiments. The analysis is performed by theoretical framework and current market direction for the shipping sector.

Tanker Investments Ltd. (TIL) is a new vehicle set up by industry leader Teekay, in order to do exactly as the name says, which is to acquire a fleet of vessels when believed to be undervalued, retrofitted to optimize the fuel conception, and sold when the market reaches up.

The sector is highly cyclical and volatile, hence a valuation of Tanker Investments Ltd. encounters challenges. The subprime crisis on the downturn of Tanker Investments Ltd.'s Stock value on Oslo Stock Exchange makes the estimation of future cash flows and asset valuation a comprehensive task, hence also interesting.

A fundamental valuating is performed and presented based on internal and external data. What the future holds for Tanker Investments is highly uncertain. The net asset valuation (NAV) delivers a estimate of USD 12,06 / NOK 78, which is the most representative valuation, based upon it's current value and uncertainties of market directions.

Synopsis

Shipping has been an important activity the last 5,000 years, and is anticipated to continue to be an important activity in the near and distant future. It's primary motivation is to transport crudes, raw materials and manufactured goods from far corners of the world, to locations where it's more needed, and it's in particular a key driver to the global economic development.

Although it's recognized to be a complex world of many uncertainties and unknowns where small margins separates the winners from the losers in a very competitive industry constantly improving it's operations and reducing costs. The shipping industry is driven by cycles of boom in relative short intervals, and any hypnotized estimates of predicting future boom markets is like a game of roulette you cannot win. The strategy is to survive the bust market to the next boom. The charter rates reached all time high in 2007 by about USD 300,000 per day, and have dropped to less than USD 7,000 per day, which is far below the operation cost.

The purpose and motivation of this paper is to access and investigate the drivers behind the shipping industry, and to make a potential good valuation of Tanker Investments Ltd., which recently passed it's initial public offering at the Oslo Stock Exchange, under the ticker TIL. The present paper summarizes the challenges and motivation of shipping, and synthesizes the complexity of it's industry. This study is the product of a master's thesis at the University of Stavanger, with support from Pareto Securities and University of Stavanger

In section 1 (Background to shipping industry), a brief view about the shipping industry is presented, it's structure and in particular the composition of it's operation. In section 2 (Shipping market economics), the economic drivers and basis challenges are established. In section 3 (Tanker Investments Ltd. & and it's environment), the history and it's developments are presented to further understand it's internal structure and strategy. In section 4 (The theoretical framework), is presenting the fundamental principles to value a company. In section 5 (Financial analysis), Tanker Investments Ltd. is examined and key estimates calculated. In section 6 (Valuation of Tanker Investments Ltd.), presents two separate valuations of the firm, discounted cash flow and net asset valuation of it's assets. In section 7 (Analysis), a comparison of it's real stock behavior is compared to the estimated valuations, and shorty commented. In part 8 (conclusion), is a summary of the findings. Central shipping terms are found in the appendix. It is mentionable that the author of this paper created many of the figures and tables used.

Although the timeframe for making estimations on the company's value in the relatively distant future seems unpredictable, this paper is a study that on how the market might affect the company value in the near and medium term.

Acknowledgements

The thesis is written as part of a master's degree at the University of Stavanger the summer of 2014. Applying theoretical framework in practice has provided me in-depth understanding of a very complex and competitive industry, where very small margins separate success from failure. It has been a great journey writing this thesis and has generated a strong curiosity for shipping, and by writing this thesis I have gained knowledge of shipping way beyond what I had imagined up front.

I would like to thank everyone that has encouraged me along the way, important insights from Pareto Securities, the lecturers at the University of Stavanger, and also my counselor Roy-Endre Dahl, for his quick feedback and suggestions.

Thank you.

Stavanger, 14 October 2014.

Christopher Hoftun

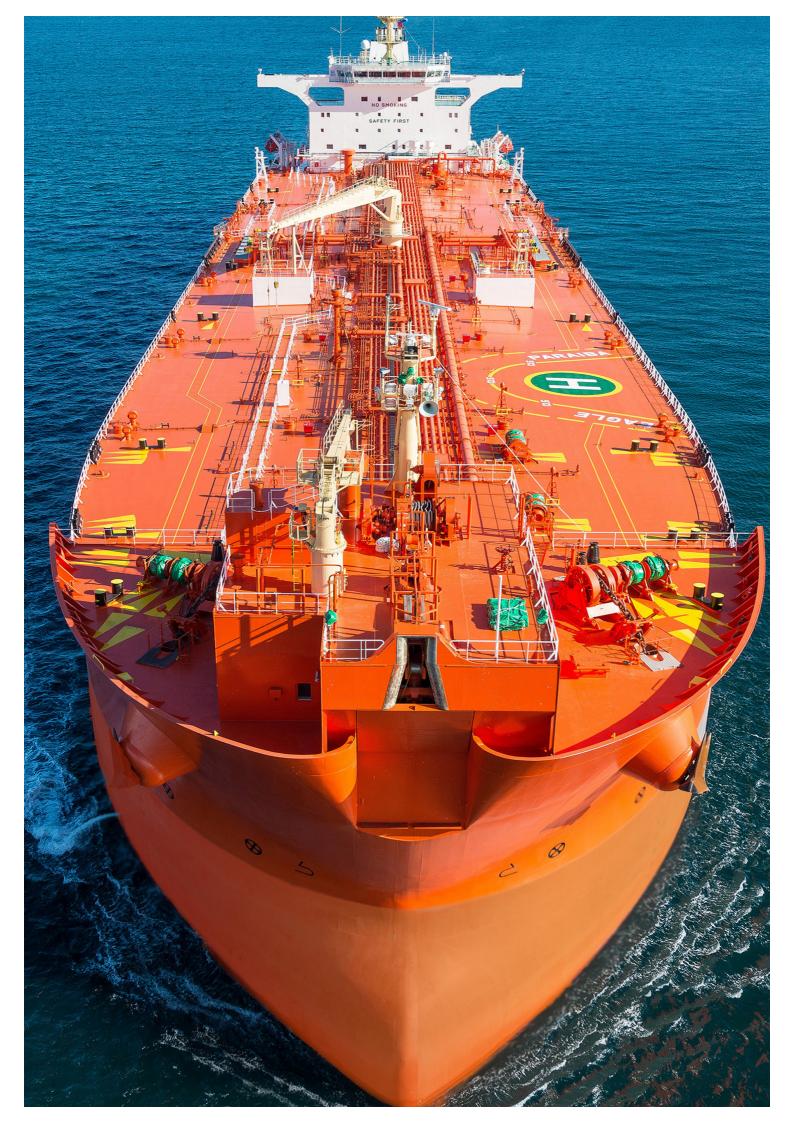


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i. Introduction

i.i. Background

The purpose of this dissertation is to complete my master's degree in industrial economics at the University of Stavanger. It has been a pleasure to learn more about the business aspects of shipping to explore and connect theories that I have been introduced to during my time here at the University of Stavanger.

The choice of topic is based on a personal interest and desire to learn more about the shipping sector, which has strong roots in Norway. I have been introduced to theoretical framework at the University of Stavanger, and it's been a pleasure to connect theories and practical aspects to analyze the shipping sector and value Tanker Investments Ltd. By performing the valuation, I have ben able to combine elements from many subjects, which I find appealing. It has been a comprehensive task to value Tanker Investments Ltd, which recently went through an initial public offering and entered the Oslo stock Exchange.

The choice of the shipping industry was not based on prior knowledge or experience, but from seeking knowledge and understanding of an old and interesting sector. My specialization on the University of Stavanger was based on risk management and project management, I found it even more interesting to asses learned theoretical framework in a highly uncertain and risky industry, where small margins separates success from failure. I chose Tanker Investments Ltd. because it recently went public, and I find the case study of it's characteristics as an investment company in a rather complex sector very interesting. Pareto Securities, which is located in Stavanger, provided important insights of the shipping sector and Tanker Investments Ltd. The complexity of valuing a company in a highly volatile and cyclical sector, distinguishes this thesis from traditional valuations.

i.ii. Objective

The main objective of this dissertation is to introduce how the complex world of seaborn trade operates, and value Tanker Investments Ltd. The complex characteristics of the shipping industry are deeply studied in the first sectors of this paper to provide a deep understanding on how the shipping sector operates and it's complexity. Then a valuation is performed on Tanker Investments Ltd., and analyzed. The following problem statement should capture the objectives:

i.iii. Problem Statement

What are the key drivers behind the shipping sector, and what is the current value of Tanker Investments Ltd. based on discounted cash flow- and net asset valuation?

i.iv. Delimitations

This dissertation is based on publically available information on Tanker Investments Ltd., hence valued based on data collected and estimations made upon. Since valuation is not an exact science there is a many approached to choose from, I based the valuation on two different approaches which I will compare at the end of the paper. The first is a fundamental approach, the enterprise discounted cash flow valuation, and the second is the net asset valuation. Forecasting charter-rates is impossible, hence I had to make subjective assumptions on expected market directions, which may not be accurate. I have used some estimates made by Pareto Securities on macroeconomic outlooks to base my estimates upon.

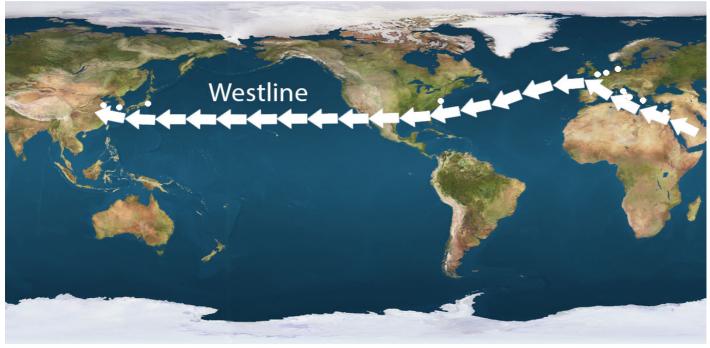
Part One: Background to shipping industry

1.1. Sea transport and the global economy

1.1.1. The origins of sea trade and commercial shipping

Since the first cargoes moved by ships for more than 5,000 years ago, shipping has played an important role in the economic growth. Shipping is a fascinating business and forefront for global economics and trade development since the early days. Well-travelled trading routes can be plotted on old maps, which haven't changed much despite the thousands of years by seaborn trade. The commercial centers of maritime trades has moved westwards the last 5,000 years, from where a fictional line hence called the Westline is derived.

Figure 1.1: Westline: describing 5,000 years of maritime trading centers



Source: Christopher, Stopford

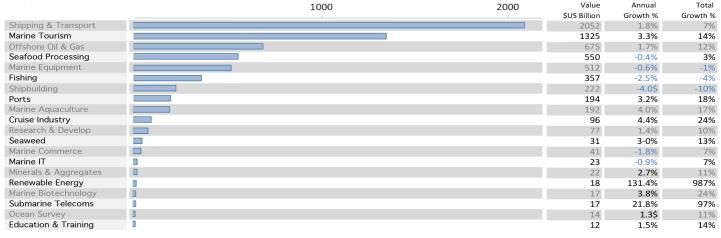
Shipping is an old and continuous changing industry with a unique opportunity to study history and learn from the past. Shipping, trade and economic development all go hand in hand (Stopford, 2009), driven by supply and demand with a global business community of free trade with only a few monopolies around the world. The industry is quite volatile with many players in a competing market. Shipping and trade depend very much on political stability and safe passage (Stopford, 2009). Today's maritime highways is quite similar to the ones opened by epic seafarers and used thousands of years ago.

Since the opening of the Panama Canal and the Suez Canal, seaborn shipping cost and time have been reduced substantially in a highly competitive sector. Take for instance the advantage of a ship traveling from New York to San Francisco, by crossing the Panama Canal it saves 12,600 km instead of going around Cape Horn. Or a ship leaving London for Bombay saves approximately 12,000 km by crossing the Suez Canal, compared to the Cape of Good Hope. When the charter-rates is close to US\$20,000 per day, it is easy to do the math and calculate the benefits of the shortcuts in both time and cost.

1.1.2. Overview of the world Marine Industry Sector

The world marine industries can be divided into four main areas; Services which is dominated by the shipping & Transport industry, Resources which is dominated by fisheries & Energy, Manufacturing which provide equipment for ship building and Oil & Gas industries, and Education & Research which is educational of personnel and R&D. The total world marine industry in 2009 accounted for more than US\$6,500 billion. The maritime business fit together in the big picture of world economy and is a global economic mechanism for trade and commerce.

Figure 1.2: World maritime industry sector totals 2005 - 2009



Source: Douglas-Westwood Limited

1.1.3. The global economy of seaborn trade

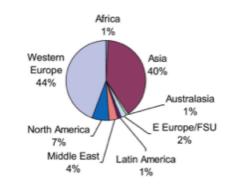
The shipping industry transported in 2011 more than 8.7 billions metric tons of cargo and estimated to account for 80-90% of world trade(Rederiforening, 2014) between 150 countries globally (UNCTAD, 2011b). Seaborn trade has grown by over 400% the past 40 years (UNCTAD, 2003), and the United Nations (UN) has noted that: "It is generally considered that maritime capabilities, specifically the ownership of substantial tonnage, are essential for countries' trade support and promotion" (UNCTAD, 2003).

The shipping industry is the backbone for the world trade, and the oceans are highways of economic development independent of time(Stopford, 2009). Seaborn trade will continue to increase, and the container sector is estimated to grow further 400% by 2022 (UNCTAD, 2003) to support the increase in demand.

The United Nations Conference on Trade and Development (UNCTAD) estimates the freight rates on operation of merchant ships is equivalent of total 5% of total world trade (US\$ 380 billion) (International Chamber of Shipping, 2014a). There is and always has been a demand for fast, cheap and reliable transport service. Globalization and the growth of low-cost manufacturing centers has made some companies re-locate their production facilities to remain internationally competitive (Douglas-Westwood Limited, 2005).

The maritime business fit together in the big picture of world economy as a economic mechanism connecting groups of people, shippers, ship owners, brokers, shipbuilders, brokers and regulators to work together in a very competitive environment. To many of them shipping is not just business, but also a lifestyle passed from generation to generation. She ships is physically assets run by shipping companies of different shapes and management structures.

Figure 1.3: Shipping regional segmentation 2005 - 2009



Source: Douglas-Westwood Limited

Table 1.1: World Shipping & Transport 2005 - 2009 (US\$ bn)

	1999-03	2004	2005-09
EU Market \$M	379 836	126 955	535 344
World Market \$M	849 744	287 904	1 206 814

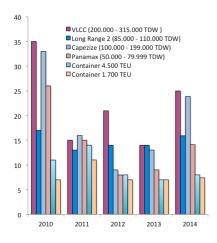
Source: Douglas-Westwood Limited

Table 1.2: Market Segmentation
World Marine Industry Totals 05-09 (US\$ bn)

Services	3 739
Shipping & Transport	2 052
Marine Tourism	1 325
Marine Commerce	41
Ocean Survey	14
Ports	194
Submarine Telecoms	17
Cruise Industry	96
Resources	1 846
Fishing	357
Aquaculture	192
Seaweed	3
Processing	550
Offshore Oil & Gas	675
Renewable Energy	18
Minerals & Aggregates	22
Manufacturing	774
Shipbuilding	222
Marine Equipment	512
Marine IT	23
Marine Biotechnology	17
Education & Research	89
Education & Training	12
Research & Develop	77

Source: Douglas-Westwood Limited

Figure 1.4: Shipping Rates 2010-2014



Source: R.S. Platou Shipbrokers a.s

Today merchant shipping & transports accounts for roughly 25% of the total maritime activity (Douglas-Westwood Limited, 2005), and hence the largest marine sector. There are more than 55,000 merchant (IHS-Fairplay (Sea-Web), 2014) ships trading internationally registered in over 150 nations (Douglas-Westwood Limited, 2005), with the population of seafarers on internationally trading merchant ships is estimated to be approximately 1.18 million seafarers (466,000 officers and 721,000 ratings) (International Chamber of Shipping, 2014b). The world entire fleet of commercial ships over hundred tons has a total gross tonnage to more than 1 billion (Scott, 2013). The sector is dominated by 'flags of convenience' whereby the vessels are registered in another nation for taxation and legislation benefits.

Shipping is the largest marine sector in Europe, with Greece as is the biggest shipping operator in world, in terms of national owned tonnage (UNCTAD, 2011a), but it's turnover is secretly guarded. However in terms of vessel numbers, owners from Germany, Japan and China own more ships. The European Union is very dependent on maritime transport, and official statistics state that roughly 70% of external trade and 20% of internal trade in terms of volume is made by sea(Douglas-Westwood Limited, 2005).

Shipping is well known for it's boom-bust industry with it's market cycles, when major upturn too many orders of new vessels are made, where any major upturn is eventually resulting in over-investing in new vessels. Advances in technology has also made shipping the most fuel efficient form of commercial transport(International Chamber of Shipping, 2014a). However ship owners and market analysts have to constantly be adapting to the changing market.

Increased demand for commodities has affected large price rises in crude oil, steel and other metals due to supply shortage and increase in shipping rates. Chinese economic growth is the main reason for the remarkable increase in shipping rates and industry profit, and China is in the process of becoming the leading global manufacturing base in a two-way traffic. Shortage on ships makes rates increase substantially like the in booms 1973 and 2004 - 2008 (shipping rates and cycles will be discussed in more detail in the next chapters). The current situation and outlook for the industry remains very good for the upcoming years; the world population continues to expand, emerging economies require more goods and raw materials, and the demands for these vessels continues to grow for safely and efficient transporting (International Chamber of Shipping, 2014a). There has been a good recovery of the bust yeas in late 2008 and 2009 by the financial crisis.

The shipping sector can be shortly summarized by three categories; bulk, specialized, and liner transport. The bulk carriers care transporting high volume of raw materials and homogeneous cargo, such as dry and liquid bulk. The raw material is stored in large cargo holds. The bulk tanker transport huge volumes of crude oil, chemicals and other petroleum products. The tankers can appear similar to the bulk carriers of size and shape, however the difference is the structure of the deck where the usage of pipelines is more dominant.

The liner container ships, which carry most of the world's manufactured goods and products most of the time in standard sized boxes, e.g. Twenty-Foot Equivalent units (TEU). The container ships usually travel scheduled lines, with a pre-determined liner port-to-port service with terminals connected with an extensive local and regional transportation network. The liner offers different services than bulk, and consist of smaller and more frequent trips. The specialized transport such as forest products, chemicals, cars and refrigerated cargo, another type of ship is used which is specially designed to handle the requirements and specifics of the cargo. Despite different ship designs, they often compete for the same cargo.

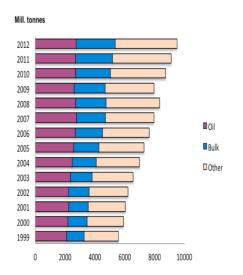
1.2. The organization of the shipping market

1.2.1 The international transport system by ships

The ships are the main assets of the shipping companies, and also can be seen as a commodity itself where transport is the product. They are physically mobile and can be placed in areas where they are most needed, in a ruthless and competitive sector. Large corporations are constantly in need of raw materials and low-cost manufacturing plants world wide, and always on the lookout where they can be provided their specific transportation needs and requirements. Manufactured goods can be shipped several times during the production between assembly plants to plant where they finish the goods and pack it.

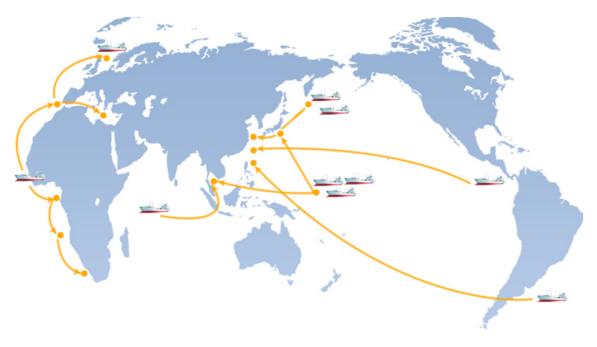
Companies are in look for areas of surplus and areas with shortage, and uses economics of scale to reduce transportation cost to maximize their profits. Most of raw materials need processing either before or after it has been shipped, the shipping industry has tight relations with companies that generates and uses the cargo. The biggest costumers to the shipping companies are mostly oil companies, chemical producers, steel mills, car manufacturer and consumer goods, retail chains. Large companies often run their own fleet for direct control of a smoother and more reliable transport-operation. However the investment locked up in the ships does not always reduce the cost of transport in the long run, hence contracting external shipping suppliers is the most economic and convenient. Long-term cargo contracts can be placed even before ships are built for time charters for 3-5 years are obtained on charter market in tight markets. A profound report was made in the 1970s of the shipping sector, and is one of the most complex reports due ever made. The Rochdale report states the following: "shipping is a complex industry and the conditions which given it's operations in one sector do not necessarily apply to another" (Rochdale Report on shipping industry, 1970).

Table 1.3: The World Trade by Sea mill. Tonnes 1999-2012



Source: HIS - Fairplay (Sea-Web)

Figure 1.5: World Seaborn Trade



Source: Vanocean

Figure 1.6: Bulk Shipping Vessel



Source: Seanews.com

Figure 1.7: Liner Shipping Vessel



Source: Wikimedia Commons

Figure 1.8: Specialized Shipping Vessel



Source: Bloomberg

1.2.2. Bulk shipping

The shipping industry has different characteristics and business models fore each of the shipping methods. Foundation of bulk shipping is it's economies of scale, by the usage of the biggest dry bulk ships can reduce more than halve the cost of transport (Stopford, 2009). Bulk shipping is built on minimizing unit cost.

The bulk shipping consists of transport of large quantities of basic homogenous materials such as iron ore, coal and grain. The cargo is high volume and price sensitive to business cycles and market sentiments.

Bulk tonnage accounts for approximately three-quarters of the world shipping fleet (Stopford, 2009). It can be divided into several sub categories of cargo: liquid bulk, such as tanker transportation, and dry bulk such as iron ore, grain coal and other homogeneous bulk cargoes. The ships handle few transactions, typically six voyages with a single cargo per annum. Bulk shipping companies have on average 0.5 - 1.5 employees in office for every ship they operate at sea.

1.2.3. Liner shipping

The cargo is too small to fill a single ship, and consist of a large mixture of general cargo of manufactured and semi manufactured goods and smaller volumes of raw materials. The liner shipping is built on speed, reliability and quality of service.

The general liner cargo can be divided into; loose cargo which is stowed individually, containerized cargo in standard boxes of 20 or 40 feet long and by 8 feet wide, 8 feet 6 inches high. Standardized containers increase the productivity, and by applying new technology time spend on cargo handling and cost are reduced.

Cargo in containers are the principal form of cargo transport, palletized cargo strapped on pallets, liquid cargo in deep tanks, refrigerated cargo such as perishable and chilled/frozen food, and heavy cargo which is difficult to handle and stow. Loading an discharge the ships is a slow and expensive operation, two third of the time are used in port and cargo handling with direct cost up to one quarter of total shipping cost (Rochdale Report on shipping industry, 1970). The ships are operated regularly scheduled between ports, with fixed prices of cargo.

The liner shipping companies' business model is quite distinctive from the other types of shipping, due to their requirements of a highly complex administrative organization in demand of high level of expertise to deal with the challenges of the logistics. The operation is highly integrated with other production operations such as factories producing, packing and shipping of manufactured goods, where speed reliability and high service is crucial.

1.2.4. Specialized shipping

The specialized shipping cargo is transported in large volume and requires specially designed ships to handle difficult and high value cargoes, where transportation requires special care and conduct. The cargo is a combination of bulk liner shipping cargo, such as; cars, forest products, refrigerated perishables/ frozen food, chemicals and liquefied gas. The specialized cargo is quite different than the other ships, and logistic systems of handling dangerous and fragile goods demand specially designed and integrated system to handle hazards goods for high standards of Health, Safety and Environment (HSE). The specialized ships make 400 - 600 parcels a year, but they are also makes spots (individual negotiated shipments).

1.2.5. Airfreight

The world air cargo traffic provides a smaller faster, but also at higher cost delivery than the naval transport Since 2001 the air freight has grown only 3.7% a year with the global economic downturn and financial crisis and rising fuel prices (Boeing, 2012). Today airfreight transport 0.4% of goods transported between regions, and the airfreight industry consists of 15,000 aircrafts compared to the more than 55,000 internationally seaborn trading vessels. At transport of high volume over large distances, airfreight is not an economical option.

1.2.6. Deep-sea & short-sea shipping

The international shipping transport system falls into two zones: inter-regional transport, which covers deep-sea shipping (and air freight) (Stopford, 2009); and short-sea shipping, which transport cargoes short distances. Deep-sea shipping is high-volume inter-regional cargoes transport between the continents by long routes between major industrial regions of Europe, North America and Asia. Short-sea shipping transport cargo within regions, and delivers cargo to distribution centrals. The ships are smaller (4,000 dwt to 6,000 dwt, trips are short and they visit more ports compared to the deep-sea vessels).

1.2.7. The Integration of transport systems

The global transport system and infrastructure is connected to an extensive network of many thousands ports and terminals, inland waterways, railways, roads, and airfreights services (Stopford, 2009). There are more than 3,000 significant ports worldwide, in theory it can be 9 millions routes between them (Stopford, 2009). The major industry regions are Europe, North America and Asia, where high-volume Inter-regional cargoes by deep-sea vessels are transported to deep-sea port and terminals, and distributed into smaller volumes and shipped to smaller ports and terminals by short-sea vessels connected to railways and roads to reach the end consumers.

Since 1969 the maritime shipping has grown on average 4.2% per annum, compared to airfreight's 6% per annum over the same period (Stopford, 2009). The industry standards are set to meet costumers requirements in an effective and economic way, by smoothly autonomous operations. However there are political restrictions of short-sea trades, which neglect trades from foreign registered and build vessels, such as the General Agreement of Tariffs and Trade (GATT) in the Unites States. The quest in the shipping industry is to win more business, and supply cheaper and better service to the costumers.

Figure 1.9: Airfreight



Source: Golden Cargo

Figure 1.10: Integration of transport system



Source: Ari Mondoi

1.2.8. The economic model

Primary raw materials such as crude oil, iron-ore and coal, move from surplus to shortage globally. It is important to note that from the statistics for commodities transported, is very hard to identify and differentiate bulk and general cargo from commodity statistics. There are three types of underlying economics behind the trade: deficit trade, competitive trade and cyclical trade. The deficit trade is based on physical shortage of product in one area and surplus in another region. And trades are done to fill the gap. The competitive trade is when countries that are able to produce products see it more convenient to import overseas than produce them selves. And the cyclical trade, is in times of temporarily shortage (Stopford, 2009). Shipping investors try to forecast the future of what kinds of ships will ordered based on statistics on stock levels held by users, depth of water at terminals, cost savings economic by scale. However it is very hard to analyze trade flows due to high complexity of diversified cargo. There are four main aspects to seaborn transport; the freight cost, the time in transit and inventory cost, reliability of delivery, and security by lower risk of damage of fragile goods. All these are important elements of doing business.

At boom markets, investors can more their investment from one market sector to another and create an imbalance in the market and across the other sectors, due to supply-demand imbalances.

1.3. The World Merchant Fleet

1.3.1. Ship types & specifics in the world fleet

Aframax vessels

The Aframax category is a medium-sized crude tanker with a ranging between 80,000 and 120,000 dwt, with carrying capacity between 70,000 and 100,000 metric tonnes. The average carry capacity is approximately 750,000 barrels. The Aframax tankers serve regions with smaller ports and offshore oil terminals where large tankers do not have access. The medium-sized tanker is used for medium haul crude oil transportation, and can serve most ports in the world due to its favorable size (Connector, 2014).

Capesize vessels

The Capesize category is a large-sized bulk carrier and tanker, typically above 150,000 up to 400,000 dwt, and is categorized under VLCC, ULCC and bulk carriers above 200,000 dwt. They are mostly commonly used to carry coal, iron ore and commodity raw material. They are designed to carry iron ore, and 93% of the Capesize bulkers carry iron ore or coal. The Capsize is too big in size to pass through Panama Canal, they require taking a long root via the Cape of Good Hope to travel between the Atlantic and Indian Oceans. After the deepening of the Suez Canal in 2009 (from 18 to 20 m), most Capesize vessels permit to pass through the canal. Due to their large dimensions, the vessels are only suitable to a few ports globally with deep-water terminals. However there is a huge demand for Capesize and the order book for new vessels has grown substantially in the world(Connector, 2014).

Handysize vessels

The Handysize vessels are dry bulk carriers or oil tankers with a capacity between 15,000 and 35,000 dwt, but can also be used as refer vessels and reach up to 60,000 dwt. The draught (33 ft/10 m) is shallower compared to Supramax and Panamax, which allows the vessels to operate in most ports and terminal globally. The vessels have on-deck cranes, which they can operate to serve ports lacking transshipment and the vessels account for the majority of bulk carriers over 10,000 dwt. These smaller vessels are used to operate within regional trading routes, and are mostly transporting small parcel sizes of dry bulk such as: iron ore, coal, cement, phosphate, finished steel products, fertilizer and grains.

Handymax and Supramax vessels

The Handymax and Supramax category are small bulk carriers and tankers with a capacity less than 60,000 dwt. The Handymax vessel is typically between 35,000 and 50,000 dwt, while the larger Supramax vessel is 50,000 to 60,000 dwt. They are primarily use for carry dry bulk such as iron ore, coal cement, finished steel, fertilizes and grains. These bulkers are well suited for small ports with restrictions or lacking ports lacking infrastructure, and they represent the majority of bulk carriers over 10,000 dwt.

Table 1.4: Vessel Dimensions

 Aframax
 245 m

 Length
 245 m

 Beam
 34 m

 Draft
 20 m

 Capacity
 80,000 – 120,000 dwt

 Capesize
 225 – 289 m

 Length
 225 – 289 m

 Beam
 37 – 45 m

 Draft
 <18.9 m</td>

 Capacity
 80,000 dwt and larger

 Handysize

 Length
 130 – 170 m

 Beam
 23 – 27 m

 Draft
 10 m

 Capacity
 10,000 – 30,000 dwt

 Handymax

 Length
 150 – 200 m

 Beam
 32 m

 Draft
 12 m

 Capacity
 30,000 – 50,000 dwt

 Supramax
 190 m

 Length
 190 m

 Beam
 32 m

 Draft
 12 m

 Capacity
 50,000 - 60,000 dwt

 Panamax
 294 m

 Length
 294 m

 Beam
 32 m

 Draft
 12 m

 Capacity
 50,000 – 80,000 dwt

 New Panamax
 366 m

 Length
 366 m

 Beam
 49 m

 Draft
 15 m

 Capacity
 120,000 - 200,000 dwt

 Suezmax
 185 m

 Length
 185 m

 Beam
 45 m

 Draft
 23 m

 Capacity
 125,000 -180,000 dwt

 VLCC
 330 m

 Length
 330 m

 Beam
 55 m

 Draft
 28 m

 Capacity
 200,000 - 350,000 dwt

 ULCC

 Length
 415 m

 Beam
 63 m

 Draft
 35 m

 Capacity
 350,000 dwt and larger

Source: Maritime Connector, Wikipedia

Panamax & New Panamax vessels

The Panamax vessels named after the famous Panama Canal, and are medium-sized cargo ships in the range 50,000 up to 80,000 dwt. The ship has capabilities to pass the Panama Canal shortening the travel from the Atlantic to the Pacific Ocean; hence the vessels should not exceed dimensional limits to pass the Panama Canal. There are two types of the vessels due to the upgrade of the canal, hence increasing the maximum dimension of the ships. The newer vessels are up to 70 m longer and 15 m wider, and can carry 8,000 TEU more than the older vessels, the older Panamax vessels have a cargo capacity of 5,000 TEU and the New Panamax vessels can carry up to 13,000 TEU. The vessels is quite popular, and there are large orders of New Panamax vessels

Suezmax vessels

The Suezmax vessels are named after the famous Suez Canal, and are medium to large-sized tanker in the range between 120,000 up to 200,000 dwt, the ship can also be used for bulk, but is almost exclusively used in reference to tankers. There are future plans to deepening the Suez Canal, and the Suezmax vessels restrictions may e redefined in the coming years. The Suezmax vessels are popular because of their design and size, and a large number of ports and terminals around the world can accommodate the vessels.

Very Large Crude Carriers

The Very Large Crude Carriers (VLCC)' is one of the largest operating cargo vessels in the world with sizes in the range between 200,000 up to 350,000 dwt. These vessels are also know as supertankers and used for long-haul crude oil transportation from the Persian Gulf to Asia, North America and European countries. Due to their enormous size, the vessels are capable of carrying huge amount of crude oil in a single trip. Despite of their large size, they are capable to pass the Suez Canal and used extensively around the North Sea, Mediterranean and West Africa. The vessels are flexible and operate in ports and terminals with depth limitations.

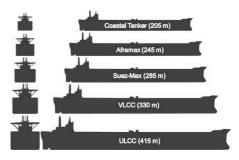
Ultra Large Crude Carriers

The Ultra Large Crude Carriers (ULCC) is the largest shipping vessels in the world with a size range between 320,000 up to 500,000 dwt. They are primarily used for long-haul crude oil transportation from the Persian Gulf to Asia, North America and European countries. The ULCC are the largest shipping vessels in the world, and due to their enormous size, they need custom built ports and terminals to accommodate the ship. As a result they can only serve a limited set of ports and terminals in the world.

1.3.3. Ship ownership & flagging

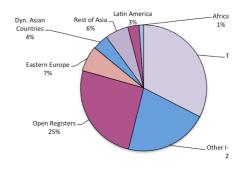
A merchant ship must be registered under a national flag, which determine the legal jurisdiction it operates. Many of the merchant ships globally, are registered in flags of convenience such as Panama and Liberia for reducing cost and subject to more beneficial maritime law. The policies of governments for national and international politics play an important role for the aspects of doing business, and where it is most convenient to flag the ship. See the table for the top 15 world merchant fleet by Flag state in appendix.

Figure 1.11: Tanker Size comparison



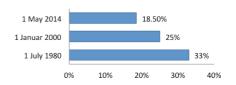
Source: Maritime Connector

Figure 1.12: Geographical Distribution of the World Merchant Fleet



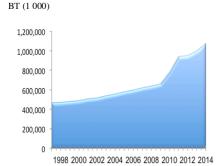
Source: IHS-Fairplay (Sea-Web)

Table 1.5: The Geographical Distribution of EU Share of the World Merchant Fleet 1980 - 2014



Source: IHS-Fairplay (Sea-Web)

Figure 1.14: World Merchant Fleet Development 1997 – 2014



Source: HIS - Fairplay (Sea-Web)

Table 1.6: Annual Average Growth Rate (%)

200	00-05	05-10	10-15	15-22
Dry Bulk	3.0	2.8	1.7	1.5
Tanker	1.3	1.7	1.4	1.3
General Cargo	3.4	4.2	3.2	2.7
Container	5.7	5.3	4.3	3.8

Source: ISL/Global Insight World Trade Service

Table 1.7: The World's Total New building Orders by Ship Type, 1 May 2014

	2014	
Ship type	Vessels	DWT (1 000)
General cargo	601	7 807
Container	525	45 312
Ro-Ro	108	940
Tankers	1 335	86 852
Bulk carriers	1 853	150 602
Total	4 422	291 513

Source: HIS - Fairplay (Sea-Web)

1.3.2. Seaborn Trade

The three economic superpowers, North America, Europe and Asia are dominant in the world economy. Europe is the larges maritime trading area with it's mature economy and one of the worlds major trading regions, maritime transport plays a major part in it's economy.

North America is huge and mostly dominated by raw materials and semi manufactures. In Asia, the development of China becoming leading economic superpower and the mature industrial economies of Japan and South Korea supports two-third of the capacity of ship building globally.

Africa is a large continent, however trade is smaller and one of the poorest regions in the world. The Middle East, Central Asia and Russia depend on exports of oil, Have 71,5% of world proven reserves combines. The oil fields are located close for sea transport and connected to short pipelines moving oil to deep-water terminals. With larges oil reserves and good sea access, last 20 years Middle East active are for world shipping industry (Stopford, 2009).

1.3.4. Aging and fleet replacement

There is a continuous replacement of old ships, which are too old and inefficient to do business. The sector is constantly changing to be more economical and increase efficiency of fuel costs. New developments in ship technologies is constantly moving towards more economical ships, and is constantly hunting the shipping companies in a demanding for profit in a sector with small shifting in demand defines a boom or bust market.

The cost of a twenty- to thirty-year-old ship may overrun the profits of the ship, if the owner see no future profit in the ship, he can choose to scrap the ship on the demolition marked through a scrap dealer, or sell the ship thorough a ship broker in the sale and purchase market.

The new ordering is cyclical and following marked cycles, when freight rates are sharply upwards, new ships are ordered, when downwards ships are scrapped. If the market sentiments of the future looks bad, the owners is most likely to shell the ships. In the world there are more than 1,400 shipbuilders and repairers listed, which more than 300 are large. Asia is the dominant shipbuilder, and the emerging China is threating the main players such as Japan and Korea (Douglas-Westwood Limited, 2005). The current shipbuilding industry is enjoying a boom in demand for new orderings due to the high freight rates and positive market sentiments for the future in the shipping sector. Seaborn trade has experienced uplift in export of containerized goods and imports of commodities in raw materials such crude oil and steel, and the commercial shipping industry has become very profitable.

The result is a large order for new vessels, and yards have full order books, new build tanker prices are up by 40% and the average delivery time is exceeds from two to three year. The shipbuilders have made much profit on the large rice of steel prices and the fall in the value of the U.S. Dollar.

The shipbuilding industry has produced on average 1,800 vessels per annum, and the market trend is towards larger container and tanker vessels, but it may reach it's practical limits due to ports' size capacity. The sector is constantly pressuring for technical improvements to reduce operating cost and improve propulsion efficiency due to high fuel prices.

1.4. The Cost of Sea transport

1.4.1. Cost of freight

The global trends I slower freight cost, and the shipping cost represents approximately 3.6% of the total value of world trade (UNCTAD, 2006). The freight rate is very connected with the shipping cycles and plays an import role in the shipping industry. The shipping business is very successful in maintaining costs low, and for many commodities freight is a smaller portion of costs than it used to be 30 years ago. For example the fluctuation of transport cost of a barrel of oil is somewhere between US\$0.50 and US\$1 per barrel. This is induced by a combination of economies of scale, new technology, better ports, more efficient cargo handling and the use of international flags (Stopford, 2009).

1.4.2. Economies of scale

It is important to understand and take into considerations that the profits of transporting a tonne of cargo per voyage is a combination of: capital cost of the ship, cost & time of operating the ship, cost of handling the cargo & parcel size of the cargo, and the time spent to reposition the ships between ports to load new cargos. The unit cost per tonne of cargo falls in general by increment of the ship size. The economic pressure on the business is driving the parcel sizes of the cargo up. In practice the big ships with high-speed handling systems was cheaper to import raw materials such as coal from Virginia to Jacksonville, Florida, to Japan suppliers over 15,000 km away, than by rail freight a couple of hundred km away, actually three times as cheap (Stopford, 2009). Economies of scale is an important factor to lower transport cost, however the tendency is not always to increase ship size of new buildings.

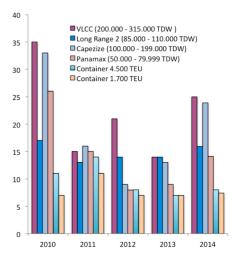
1.4.3. Maritime Logistics

The supply chain and the logistics have to be planned carefully for optimizing transportation to reduce costs and monitor performance. The logistics is quite complex with millions of elements, and the logistics is as much an art as a science (Stopford, 2009)

1.4.5. Shipping Company Type & Structure

There are several forms of shipping company structures, strategic objectives, strategic objectives and how the decisions are made. All the different organizational structures have both it's advantages and disadvantages. Each company structure is different and it is important to be aware of how the decisions are made by the management and in some cases the main board representing shareholders interest. The sole proprietorship or private company is a small tight organization mostly owned and run by families, passing on from generation to generation. The companies are small and possess mostly only a few ships and dependent on their own resources to raise capital. The number of important decisions is small, and handled accordingly with less bureaucracy and approval from main board. The advantage is that the owners have profound knowledge on the sector. On the other hand there is the large corporation with top management constantly on pressure by board of directors and board members who wishes to maximize return on capital. In these large corporations the board members, who makes the call have often little of no previous knowledge of the industry. The larger corporation has a complex staff and administration office to manage day-to-day business. Each company has its own structure and strategy of doing business.

Figure 1.15: Freight Rates 2010 - 2014



Source: R.S. Platou Shipbrokers a.s

Figure 1.16: Main Routes for Container ships

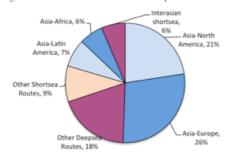
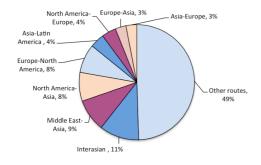
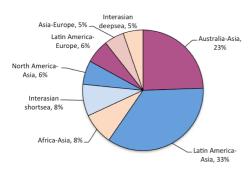


Figure 1.17: Main Routes for Product Tankers



Cape Figure 1.18: Main Routes size Bulk vessels



Source: IHS - Fairplay (Sea-Web)

Table 1.8: Container Traffic in Major Ports 2012

		(mill tonne)	Av. ann. Growth
Rank	Port	2012	(%)
Top 10			
1	Shanghai	32 528	5,0
2	Singapore	31 649	1,7
3	Hong Kong	23 071	0,4
4	Shenzhen	22 960	1,7
5	Busan	16 996	5,1
6	Ningbo	16 783	11,8
7	Qingdao	14 609	8,3
8	Guangzhou	14 514	11,4
9	Dubai Ports	13 300	4,3
10	Tianjin	12 298	9,7

Source: ISL Bremen

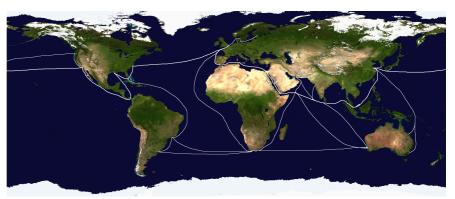
1.5.1 Overview of the Distances and Transit Times

There are three economic centers globally: North America, Europa and Asia. These three continents imported approximately 88% of the world cargo transported by sea (Stopford, 2009).

The relative large distances from one continent to another and the relative slow sea transport, it takes 80.1 days to circumnavigate the world using a container bulk carrier at 13.6 knots, and 47 days using a container-ship operated at 23 knots (Stopford, 2009). Ships normally operate somewhere between 13.6 knots (25 km/h) to 23 knots (42 km/h). By increasing the speed, the bunker cost goes almost up substantially and not worth the expenses associated with the reduced transit time. The ships are designed for designated speeds, and the design is made for a specific speed to be most fuel-efficient.

From the figure the thicker white line is the shipping route between economic centers, followed by container ships, and other specialized cargo vessels such as car and chemical. The lighter lines are routes bulk vessels transports raw materials, oil, iron-ore, coal, into economic centers.

Figure 1.19: The World's Major Shipping Routes



Source: Christopher, Stopford

1.5.2. The role of ports and terminals in the transport system

Ports and terminals play an important role in the integration of the transportation network, where it connects the shipping vessels to distribution channels. Globally there are over 8,000 ports & terminals, in which 2,000 are major and significant. The top 50 ports in the world handles majority of business, both public and private ownerships.

The majority of the publically owned ports suffer from low productivity. The ports in private ownerships are often focuses on handling containers.

Each port and terminal has a different a special design to meet the services needed in the region with integrated and automated cargo-handling systems. It plays a critical interface between land and sea transportation. They are required to be efficient when vessels stops for only a few hours for unlading and loading cargo, the ports are crucial for in ship efficiency.

The ports provide safe locations for ships to berth when they are not at sea. The ports and terminals charge ships by usage of their facilities to provide their income, and the ports and terminals are quite competitive as well.

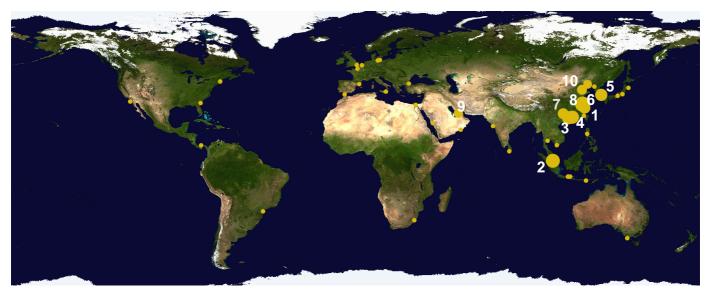
However fast-growing container capacity is outgrowing the capacity of many ports to receive the cargo. The result is that ports need upgrades and very large investments to expand port capacity globally. As seen from the table 1.8 and figure 1.19, the seven largest ports in the world are in China, and nine out of ten are also Asia

Table 1.9: The 10 Biggest Shipping Ports in the World

Rank	Port	Country
1	Shanghai	China
2	Singapore	Singapore
3	Hong Kong	China
4	Shenzhen	China
5	Guangzhou	China
6	Busan	South Korea
7	Ningbo-Zhou Shan	China
8	Qingdao	China
9	Dubai	United Arab Emirates
10	Tianjin	China

Source: World shipping

Figure 1.19: The 50 Biggest Shipping Ports in the World



Source: Christopher, Business Insider

Part Two: Shipping Market Economics

2.1. Shipping Market Cycles

2.1.1. Shipping Cycle

The waves of shipping cycles ripple through the shipping industries in both directions of boom and bust times. Last century has been a struggle through recession, but also high-cash-rolls in boo markets. The cycles are like a poker game, where bets are placed on future market from current market sentiments. The shipping investors are risk-takers with financial access with small physical needs of offices space and staffing. They are players in the world biggest poker game, betting million dollars on the market (Stopford, 2009). However the shipping industry involves a good combination of skill, luck and psychology to handle the ruthless competition. The shipowners must know the rules and also process the skill to handle rough roller-coaster shipping cycles.

Take for example the changes in profits for transporting grain from the United Stated to Rotterdam by a Panamax bulk carrier, after operational cost, the shipowner would earn US\$ 1.0 million in 1986, and for the same freight, US\$3.5 million in 1989, US1.5 million in 1992, US\$2.5 million in 1995 and US\$16.5 million in 2007. To buy a New Panamax in 1986 would cost US\$13.5 million, US\$40 million in 1990, US\$19 million in 1999 and US\$58 million on 2007. This is just an example of how large the fluctuations in the shipping market can be through the cycles (Stopford, 2009). Shipping investors is view upon by investors from other sectors as shortsighted and incompetent by over-ordering new ships, triggering another recession. However since the last century there has been an impressive reduction in shipping costs. Professor A. W. Kirkaldy describes the cycles as 'a succession of prosperous and lean periods which sort out the wealthy shipowners from their less fortunate colleagues'. Several lean years would be followed by series of prosperous years. The whole industry could be described by Darwin's principle of survival of the fittest. The weak shipping companies are forced out by the stronger. Fostering a lean, competitive and efficient shipping business (Stopford, 2009).

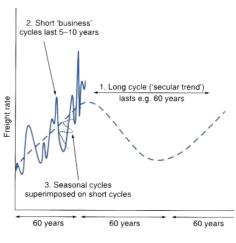
The world business cycle is triggered by random events such as wars or political instability, and the result of high freight rates attracts new investors, expanding the whole shipping capacity. The cycles are more about psychology and people than statistics. First the shortage of ships develops, high freight rates stimulates over-ordering of new vessels, and leading to the market collapse. The main function of ships is to supply ships for transporting raw material or goods for world trade. New ships are setting new standards in the industry, however the transition time for the new vessels with more efficient technology takes up to twenty years to enter the marked. The stakes are high, and one shipowners fortune is another shipowners disaster, they have to constantly adapt to unforeseen events in the market, survive through cycles to make massive profits at peek-times.

Any shipowner or investor who attempts to make long-term forecast is doomed to fail, it is totally impossible to predict future markets, the entering investors influence makes the market unpredictable. It is easy to forget the human factor in the equation. Investors does not necessary act rationally, and over-reach to price signals from the market. There is also a struggle between fear and greed. Humans are influenced by emotions from those around us (Stopford, 2009).

2.1.2. Characteristics of Shipping Cycles

Economist have analyzed the shipping cycles deeply, it is quite complex and consists of several components which can be separated statistically by a technique know as 'decomposition' (Nerlove et al., 1995). Referring to the French economist Cournot, there are three components in typical cyclical times series, the secular variations that are independent of the periodic variations is distinguishing shorter-trends from longer-trends. This results in counter-cyclical ordering, where investors try to anticipate the recovery of the market and order large volumes of cheap ships to be well positions at boost times.

Figure 2.1: Seasonal, Short and Long Cyclical Components



Source: Stopford

The first is what he referrers to as the 'secular trend', which is the long-term cycle. In the figure 2.1, this is the blue dashed line. It is important to understand where the trends are headed, moving upward means good for business, and meanwhile downward is bad news. The long-term cycles are driven by technical, economic and regional changes such as social and political changes. It is of great importance and hard to detect.

The second component are the short cycles, also referred to as the 'business' cycles, this is the cycle that most people view as the shipping cycle. The short and long cycles are correlated and overlap each other. It fluctuates up and down completing a cycle in about 3-12 years from peak to peak. The economic business is the drivers behind the shipping market cycle and referred to as "the state of trade that revolves apparently in an established cycle of quiescence, improvement, prosperity, excitement, overtrading, convulsion, pressure, stagnation and distress" (Schumpeter, 1954). The short cycles have four main stages: a market through (stage 1), followed by a recovery (stage 2), leading to a market peak (stage 3), and followed by a collapse (stage 4) (Stopford, 2009). There are supporting evidence that longer cycles are often produced by build-up of supply capacity in profitable market sparks (Stopford, 2009).

The third component is the seasonal cycles, in general this is regular fluctuation within the year by differences e.g. to harvesting season or stock building. The fluctuations of freight rates are triggered by seasonal patterns and demand for specific sea transport.

2.1.3. Stages in shipping cycles

Stage 1: Through

The first sign is surplus in shipping activity, then the freight rates falls to operating cost of the least efficient ships and then the credit is tightening by the low freight rates. This generates negative cash flows and a strong financial pressure on operating the ships even more efficiently, modern ships are often sold cheap, and older ships are sold to scrap prices.

Stage 2: Recovery

There is more balance between supply and demand, freight rates pass the operating cost and shipowners slowly starts to make profit on the ships once again. Laid up tonnage reduces, and there are confidence growing in the market. However the market sentiments are prevailing and still in balance, but there is optimism in the market. The liquidity improves and second-hand ship prices increases.

Stage 3: Peak

The surplus has absorbed the supply and demand, most new ships are now operating at full capacity, and however the most inefficient ships are laid up. Freight rates are multiples 2-3 times operating cost, and the high earnings give increased liquidity and loans from banks. New shipping companies flock to the stock market and resulting in over-trading. This leads to second-hand ships valuated even higher than new ships entering the market. Optimistic investors order too many new vessels, the capacity of the shipbuilders are tighten slowly in the beginning, and then the masses kicks inn and the order-book is fully books for the next 3 to 4 years.

Stage 4: Collapse:

The supply overtakes the demand and freight rates falls dramatically into a collapsing market. The whole business cycle downturn and ships reduce operating speed to reduce bunker cost of fuel. The least attractive vessels are just waiting for cargo. The liquidity remain high, there are few ship sales due to owners are expecting old market valuation on their ships, the new market sentiments are confusing the investors.

Figure 2.2: The Four Phases of Shipping Cycles



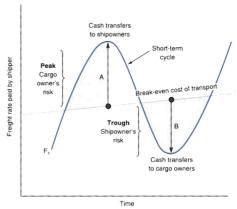
Source: Insightadvisor

2.1.3. Shipping Cycle Risk

Risk in the shipping sector is defined as the "measurable liability for any financial loss arising from unforeseen imbalances between the supply and demand for sea transport" (Zannetos, 1973). The shipowners (investors that owns the equity) and cargo owners (shippers) are primary taking the risk, they are working with opposite forces. When one is making money and the other is loosing money, there is always a balance and strong forces are pushing in opposite direction. If the shipowners bet wrong on the market, there will be to many ships available and freight rates goes downward, this will benefit the shippers for more convenient rates. On the other hand if the cargo owners produce too many cargoes compared to ships available, freight rates goes upward and the shipowners benefits.

The volatility of the cycles defines the individual risk profile and strategy of the company, and there is a strategic choice between spot and periods as a matter of policy constantly changing. Over 270 years of shipping many shipping cycles has been identifies. The statistical standard deviation is 4.9 years, mean of 10.4 years cycles and confidence interval of 95% certain between 0 and 20 year long cycles. The statistics

Figure 2.3: Key Risk Factors of Shipping Cycle



Source: Stopford

does not help the shipowner to act rational behalf of the statistics. However there is rule of thumb that each shipping cycle last about 7 years, but the length of the cycles is also cyclical. The cycles are not regular, and there are no firm rules, investors relying on the rule of thumb of 7 years long cycles are asking for trouble.

2.1.4. Technological trends & Political Stability

The technological trend changes the shipping industry for the better, bigger ships, specialized vessels, improved on-board technology and more efficient engines, has reduced the cost of freight by two-thirds the last 60 years. However several political developments have played largely influenced on the market, such as the nationalization and closing of the Suez Canal in 1956 & 1967, Gulf war in 1990 and the Iraqi invasion in 2003. The political influences are clearly apparent.

2.1.5. Short term cycles and waves 1945 to 2007

There are some interesting findings, there are eight cycles and the average duration is quite short by average peaks of 2.4 years, troughs of 3.2 years and average cycles of 5.6 years. In 1951 a wave of panic stroke because of stock building, seaborn trade grew 16% and the peak lasted more than a year, the spring 1952 the freight rates fell up to 70%. The Suez Canal crisis in 1956 was the biggest killing on the industry, crude tankers had to be rerouted through Cape of Good Hope and there were not enough ships available to meet the oil demand. The charter rates increased substantially, and companies signed long term contracts believing the Egyptians would not be able to run the canal. The reopening of the canal struck the companies when they showed the world they were able to operate the canal. The reopening reduced the tanker demand, and record numbers of deliveries of new vessels hit the market hard when they were not needed.

By the recession in 1979 struck by oversupply of tankers from speculative investments, the shipbuilding industry were able to build 60 m.dwt of merchant ships a year, which is far more than then market required to meet demands for new ships. The Iranian revolution pushed oil prices from US\$11 a barrel to US\$40, resulting in a massive response from consumers to seek alternative sources of energy and reducing the demand for oil imports.

The depression was until sufficient numbers of ships was scrapped to restore, once again the market balance where young vessels were paying the price and being scrapped for almost nothing. In November 1983, an 8-year old 318,707 dwt tanker was sold as scrap for US\$4.65 million. The developments in the Chinese economy hit the industry in 2003 when they launched an open market model to attract inward investment to China by serious infrastructure developments and importation of enormous quantities of raw materials. There are large variation of shape and intensity of the cycles, and 2008 was the biggest boom in more than 270 years.

Each cycle is irregular, different and driven by undercurrent of economic fundamentals of supply and demand, and it is not easy to anticipate the effect of the cycles. Shipping cycles are not at random, and there are economic & political forces behind them in a complex and unpredictable world economy. However the surviving members of the tanker fleets the last century has shown remarkable ability to adapt.

2.2. Supply & Demand

2.2.1. Signposts

The shipowners have mainly two jobs: to operate the ships and have them placed at the right place the right time. The maritime supply & demand is extremely complex to fully understand, and only the most important factors are used to create a model for further understanding. The freight rates which are in tight connection between supply and demand. In the simplified model of the world of shipping supply & demand, there are five factors affecting demand and five factors affection supply. Demand is determined by the world economy, seaborn commodity trades, average haul, random shocks and transport cost. The supply is determined by the size of the world fleet, fleet activity, shipbuilding, scrapping & losses, and freight revenue.

The demand is quite volatile, unpredictable and is changing fast. Even small freight mechanisms amplify even small imbalances, creating large ripples in the world of sea transport. However the supply is slower and not that volatile, it takes 2-3 years to complete a ship depending of it's size and the average ships life time is 15-30 years. Mathematical models cannot predict human behavior, and psychology is as important as fundamentals, charterers can get panic over night just by market rumors. The market is dynamic, and supply and demand is determined separately by different factors. As seen from the figure 2.4, even small unbalances have its impact on the equilibrium on the shipping market.

2.2.2. Demand of Sea Transport

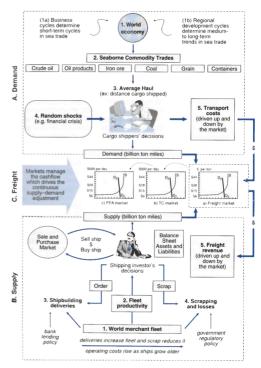
The first and the single most important factor for shipping demand is the World Economy, the close relationship between shipping and world economy goes hand in hand in cycles as discussed in previous section. The successfully shipowner is required to have knowledge of developments in the world economy, and understand growth rate of sea trade and GDP is mirroring each other, as seen how sea trade and GDP are linked together in figure 2.5.

Secondly, seaborn commodity trades are both short-term and long-term, they are volatile due to both rational and seasonal fluctuation and behavior.

Thirdly, average haul and ton miles is used to quantify price of distance and time to complete voyage. The tonnage of cargo is multiplied by average distance transported. Analyzing average haul of a commodity trade is extreme complex.

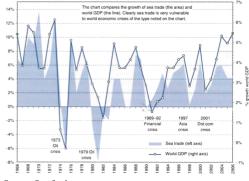
Fourthly, Impact of random shock on ship demand is always playing large part of the unknown, special circumstances can have dramatic effect on demand triggered by e.g. unexpected climate changes and wars. They are often hard to forecast and outside the market analysis's predictions. The fifth and final factor in demand is transportation cost and long run demand, raw materials and commodities are only transported from distances if cost is acceptable.

Figure 2.4: The Shipping Market Supply and Demand Model



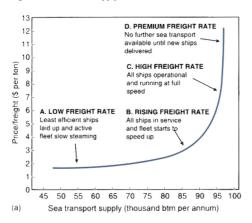
Source: Stopford

Figure 2.5: World GDP Cycles and Sea Trade



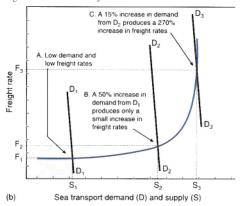
Source: Stopford

Figure 2.6: Short-run Supply Function



Source: Stopford

Figure 2.7: Short-run Adjustments



Source: Stopford

2.2.3. Supply of Sea Transport

The first factor for shipping demand is the decision-makers who control the supply, this is a influential group consisting of shipowners, shippers, bankers and authorities. The shipowner is the most influential, shippers may become shipowners and the banks can hold back on finances in weak markets. The second is the size of the merchant fleet, scrapping and deliveries of new ships determines the rate of the fleet growth. Thirdly the fleet productivity is a factor with a large element of flexibility. Merchant ships carry only cargo only a small fraction of the time. A typical year for an average VLCC is 137 days carrying cargo, which is roughly one third of the time, Ballast time accounted 111 days and cargo handling 40 days. The remanding 77 days was spent on non-trading activities. The operation performance is adjusted to market conditions. Fourthly is the shipbuilding production it takes from 1 to 4 year to build a new ship depending on size of ship and orderbook. Fifth and last is the freight revenue, this is the ultimate regulator, which the market is used to adjust capacity to find ways to reduce cost and improve efficiency.

2.2.4. The freight rate mechanism

The freight rate is linking supply and demand; the shipowners and shippers have to negotiate the freight. The freight rate is in balance of ships available and cargoes to ship. If there are too many ships, the freight rate goes low, if there are too many cargoes, the freight rate goes high. The freight rate is constantly changing bringing supply and demand into balance (Stopford, 2009). Shipowners tend to make their bet and investment on the current state of the market. In the supply function we can see how the freight rate responds to the sea transport supply.

In figure 2.6, at point A, we can see that sea transport supply is at 50 btm per annum, the least efficient ships are more expensive to operate and are laid up. At point B, all the ships are in service and operating, the supply have raised to 85 btm. At point C, the whole fleet is operating at maximum speed. At point D, there are no more sea vessels available, the shippers fight for the last ships and even the most inefficient ships which have high operating costs are in service.

In figure 2.7, we can clearly see the equilibrium points and settling points between supply and demand (Stopford, 2009). At point A, the demand is low and the freight rate settles at point F1, at point B, the demand has increased, but the freight rate has not increased much, as we van see in equilibrium point F2. At point C, the demand has increased substantially driving up the freight rates to equilibrium point F3, however it is important to be aware of markets like this are not stable for longer periods.

2.2.5. The Four Market Places

There are four closely related markets in the shipping industry, which are closely linked by cash flows and market sentiments. Shipowners trade in all four markets, and rippling effects from one market place will affect the others (Stopford, 2009). The market sentiments can be felt in all four markets in boom or bust times.

1. Freight Market

The first is the freight market, this is the main source of cash for shipping companies, sea transport is offered and negotiated in terms such as time-charter or voyage-chartered, often through brokers. Shipbrokers discover what cargoes and ships are available at all time, and negotiate terms in hard competition against other brokers. Knowledge is power and it's all about information. The biggest broker-center is located in London, but there are important centers located all around the world: New York, Tokyo, Hong Kong, Singapore, Piraeus, Oslo and Hamburg. A ship can be time-chartered over a certain pre-defined period, the ship is hired by a fixed daily rate. This is for the more experienced ship operators who bring their own management to run and operate the ship. This is a more complex and riskier process. The shipowners pay the operating cost of the vessel. A ship can also be chartered for the voyage, hence voyage-charter is generally a fixed price for transportation of certain goods from one port to another, shipowners are managing and operating the ship. A bare boat charter is also an option when investors or financial institutions own the vessels, lease it out to chartering companies, operating and paying operating costs for the ship.

The tanker industry generally uses a freight rate index, the Worldscale Index, which is showing all routes and the cost of transport by standardized vessels.

2. Sale & Purchase

Second is the sale & purchase market of second-hand ships where factors such as freight rates, age, inflation, and market expectations are playing the market. Analysis shows that there is a relationship between freight rates and sale & purchases. A five-year old ship is valued four to five time it's current annual earnings, based on the one-year time-charter rate. The price is quite volatile, and timing of boom and bust markets is important (but also extremely complex), the price is negotiated between buyer and seller, and the price is dependent on market cycles.

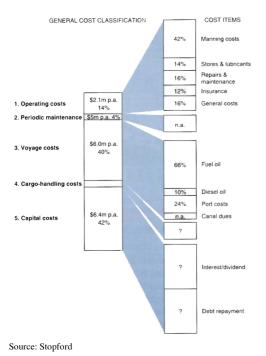
3. New buildings

Thirdly is the new building market where shipyards construct new ships, in bust markets shipowners gets cheaper ships and have more influence, however in boom market shipyards are much more dominant setting the framework.

4. Demolition Market

Forth and last is the demolition market, where old of inefficient ships are scrapped. This is also volatile and scrapping prices are dependent on the demand for scrap metal. The demand is depending on local steel markets mostly located in the Far East (Stopford, 2009).

Figure 2.8: Cost of Running a Bulk Carrier



The shipping company has to create financial strength to survive the challenges of recessions and depression until next market booms, wisely investing and lay out the framework for the right strategy to get return on capital is essential. However it is easier said than done keeping control of business at recession and taking advantages of bad times to squeeze out competitors before peek cycles once arise. The shipping companies must keep the balance and have access to capital and liquidity to avoid selling ships as scrap at bust markets at low cash flows. There are many important aspects to be discusses of the financial structure of buying newly build ships from the second-hand market.

2.3.1. Investment Strategy

The financial performance of the shipping company is the main key for survival, there are three variables of great importance; revenue received by chartering and operating the ships, operating costs and how to finance the business. In a very competitive industry, the importance of maintaining an advantage by low operating cost and capital payments on debts, and can be the difference of success or failure. The financial performance within the shipping sector is also varying and tightly connected to balance each other out over time. In general one sector clearly influences the whole industry.

There is a strategic decision between operating older or newer ships, operating an old fleet of ships has higher operating costs and maintenance costs, compared to newer ships which are more fuel efficient and need less maintenance (Stopford, 2009). However there are different financial structures of how to finance ships, either by issuing debt and commitments and pay capital repayments to banks, or finance the ships by equity with no future repayments of the ship, but paying dividends to shareholders, both strategies have different advantages. There is a great deal of risk associated with both financial structures, at boom markets both will be efficient and generate high cash flows, but at bust times the financial distress will be placed on trial when operating costs are higher than freight rates and fixed parcels of repayments are due. Older ships with high equity, but higher operating costs compared to newer ships with more earnings potential, often at cost of higher debt obligations. How to find the best strategy to survive bust markets is quite complex.

2.3.2.The Cost of Running Ships

The dominant factor in shipping is all about moving cargo from one place to the other. The business unit costs, also called deadweight cost per annum, is used to see how economic the ship is running in the long run. The business unit costs is the sum of operating cost, periodic maintenance cost, voyage cost, cargo-handling cost and capital cost, divided by the deadweight of the ship. It is important to understand where the costs are coming from, to correct and implement improvements to be more efficient and economical. See figure 2.8, for an analysis of major costs of running a bulk carrier. In the end they all have it's saying in big the picture if the company is making or loosing money in the long run (Stopford, 2009). It is important to acknowledge that operating cost and capital cost does not necessary increase with deadweight of the ship. Bigger ships have reduced freight cost by economies of scale and have the advantage of generating positive cashflows at freight rates, which is uneconomic by smaller ships. All costs are variables, and depend on external factors such as oil price etc. Each of the cost factors will be discussed further to have a clear understanding of all costs related to the day-to-day operation of the vessels.

2.3.3. Operating Costs

The ongoing expense for ship operating is depending on size and nationality of the crew, age of she ship and maintenance policy, how the ship is insured and administrative effectiveness of the shipping company. The crew cost is all cost direct or indirect of each crewmember, and can be up to half of the operating cost depending on ship size. Modern crew size on deep-sea vessels accounts for up to 17 crewmembers, but on new vessels with high efficiency can fully operate at only 10 crewmembers. About 15% of operating cost is domestic items used on ships, where lubrication oil accounts for major cost. Routine maintenance of the hull and machinery accounts for 14% of operating cost, the insurance protecting the ship and cargo against physical losses is up to 14% of operation cost. There is also cost related to the registration of the ship and fag of state, depending on ship size and state.

2.3.4. Periodic Maintenance

The ships have to dry-dock for periodic maintenances, and go through regular survey every second year, and a special survey every fourth year by a classification society, to document if the ship is seaworthy and provide documentation for e.g. insurance of the ship. This requires dry-docking and account for approximately 4% of costs, depending on age and condition of the ship.

2.3.5. Voyage Costs

The voyage cost is the highest cost, and accounts for up to 47% of the total cost, the bunker prices are fluctuating and depends on the oil price, this is one external factor that cannot be controlled by shipowners, however there has been great improvements in fuel efficient engines to reduce fuel costs. When a ship enters a port, the ship is subject to port charges, this is a major component and the fees are depending on the service the ports are provided, size of the vessel, time in port and type of cargo. A typical Panamax bulk carrier, loading 70,000 tonnes of coal in Australia, discharging in Europe, cost approximately US\$147,000 in port fees, that is roughly US\$2 per tonne (Stopford, 2009). There are also dues for transiting the Suez Canal or Panama Canal, they have different cost structure based on ship size and cargo.

2.3.6. Cargo handling costs

To load and discharge costs are related to handle the cargo, and depend on how efficient the ship is to handle cargo and time spent in port. The cargo has to be loaded, stowed and discharged, and account for a large proportion of the time of the ships in ports.

2.3.7. Capital Cost of the Ship

The capital cost of the ships accounts for up to 42% of the total cost, and is quite different compared to the other costs of running ships. It has three main components, purchase of ships, periodic payment to bank on debt, and sale/scrapping of ships. Purchase of ships can be done on the secondary market or from shipyards directly, financial structure can be quite different by choosing to buy old vessels versus new vessels. The debt obligations and repayment of financed ships have no influence by ship operation, and it's due is independent on how the ship is running.

During recession, shipowners financed by equity is safe, the business may not be profitable, but they have control and can choose how to operate the ship without satisfying any debt obligations. Ships financial structure is crucial, and during recession when operation costs are higher than freight rates, shipowners still have the commitment to satisfy the banks, and not default on debt. If they default on debt, they may loose control of the ship to the banks, and ship to be sold on secondary markets at large discounts. During the ship's lifetime it is depreciate, often at a linear straight-line depreciation, depending on the ships expected operational lifetime.

2.3.8. Ship Revenue

There are different ways shipowners can earn revenue, they can choose between different models such as voyage charter, time charter or bare boat charter, as mentioned briefly in "The Four Market Places". The ships productivity is a large component on how much the shipowners make, closely related to operating speed, how much cargo the vessel can carry and freight rate for transport. Fast ships earn more revenue, but at higher bunker costs. It is important to acknowledge when ships are operating at higher speed, they also have higher bunker costs, which is not always convenient. It is in general more economical to operate ships at lower speed, and spend more time at sea, rather than very high bunker costs, but fast deliveries. It is always a trade-off between revenue and cost, in recession when unpaid bills pile up, it's all about survival.

2.3.9. Valuating Ships

To valuate the ships value, sale & purchase brokers are involved. The market value of the ships shift rapidly and a close comparison of the current market values of similar ships sold at the secondary market by type, size, age, yard of build and specification. A valuation certificate is determining the physical characteristics of the ships, and the ships valuation is based on willing buyers and willing sellers, market to date. Different brokers can valuate the same ship at different estimates, depending on their view of market sentiments and their beliefs and predictions of the future. There is a lot of historical data of sales & purchase that can be taken into consideration at boom or bust markets.

For sale of ships to be scrapped the lightweight (lwt) of the ships is determined, which is the physical weight of the ship, and the scrap price is established by local steel rates. The scrap value is multiplied by lightweight of the ship to determine the price, this market is almost as volatile as second hand market prices, and the last 20 years the price of lightweight has been between US\$100 and US\$550 (Stopford, 2009).



Part Three: Tanker Investments Limited & it's Environment

3.1 Tanker Investments Limited (TIL)

3.1.1 Introduction

Tanker Investments Ltd. (TIL) is an investment company formed by Teekay Tankers Ltd. and Teekay Corporation with focus on the tanker market. TIL was incorporated as a corporation on 10 January 2014 under the laws of the Republic of The Marshall Islands.

TIL completed it's initial public offering (IPO) in March 2014, and is currently trading at Oslo Stock Exchange under the symbol TIL. The strategy is to acquire, operate and sell modern secondhand tankers when opportunities surge from cyclical fluctuations in the tanker market. Tanker Investments' fleet is currently consisting of 14 vessels managed in the existing Teekay Pools. The Teekay Corporation has a strong name and built up expertise, relationships and reputation in the market since 1973. The vessels are employed on the spot market and on the fixed rate time-charter for the highest vessel utilization and daily revenues (Pareto, 2014).

3.1.2. History & Development

Tanker Investments was incorporated at the Marshall Island January 2014 by Teekay Corporation, and raised US\$ 250 million in private placements from investors at US\$ 10 per share listed on the Norwegian OTC market. Teekay Tankers and Teekay Corporation co-invested US\$ 25 million each, then the company went public at the Oslo Stock Exchange in March, and raised another US\$ 175 million. Following the IPO, there are 38.4 million shares outstanding. Teekay Tankers and Teekay Corporation control combined roughly 13% of the company.

3.1.3. The Fleet

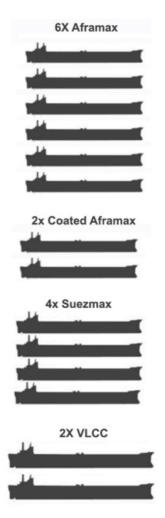
The tanker Investments Ltd fleet as of July 2014 consists of 6 Aframax vessels, 2 Coated Aframax vessels, 4 Suezmax vessels and 2 VLCC vessels, in a total of 14 fuel efficient vessels, which are wholly-owned by the group, with an average age of only 4.1 years, including Peak Spirit scheduled for delivery before the end of September 2014 (Tanker Investments Ltd, 2014).

Table 3.1: Tanker Investments' Ltd. Fleet

Vessel name	Type	Yard	dwt	Built	Age
Tarbet Spirit	Aframax	Tsuneishi Shipbuilding	107 529	2009	5.0
Emerald Spirit	"	Hudong Shipbuilding	109 000	2009	5.0
Garibaldi Spirit	"	"	109 000	2009	5.0
Whistler Spirit	"	"	109 000	2010	4.0
Blackcomb Spirit	"	"	109 000	2010	4.0
Peak Spirit	"	Sumitomo Shipbuilding	104 000	2011	3.0
Hovden Spirit	Coated Aframax	Hyundai Shipyard	105 276	2012	2.0
Trysil Spirit	"	"	105 276	2012	2.0
Tianlong Spirit	Suezmax	Bohai Shipbuilding	159 000	2009	5.0
Jiaolong Spirit	"		159 000	2009	5.0
Shenlong Spirit	"	"	159 000	2009	5.0
Dilong Spirit	"	"	159 000	2009	5.0
Hemsedal Spirit	VLCC	Daewoo Shipbuilding	320 106	2010	4.0
Voss Spirit	"	"	320 041	2010	4.0
•					

Source: Pareto Securities and Tanker Investments Ltd.

Figure: 3.1. Tanker Investments Ltd. Fleet



3.1.4. Competitive Strengths

The key competitive strengths of Tanker Investments' is that they have a fleet manager with extensive experience in fleet expansion from Teekay Corporation, which has acquired and ordered over 50 vessels with a total of US\$ 5.0 billion since 2009. This gives Tanker Investments access to valuable industry relationships to integrate new assets into it's operations. The group have also access to Teekay Corporations' extensive experience and knowledge built up over 40 years in the medium sized tanker market, which Teekay Corporation also is the world's larges operator of medium sized oil tankers. The group assesses competitive advantages obtaining spot rates to maximize cash flow and opportunities to acquire second-hand vessels from it's network of companies. The existing customer relationships through Teekay Corporation present significant growth opportunities in combination of it's well known global brand in the shipping industry (Tanker Investments Ltd, 2014).

3.1.5. Business Strategies

Tanker Investments' primary business strategies are to acquire modern second-hand tankers from motivated sellers, which includes existing tanker owners and banks. At the current market, second-hand tankers are valued below the historical ten year-average values. The company pursues attractive acquisitions of second-hand vessels, one to seven year of age, which is prior to their second special survey, to operate in the pool and modify the vessels for enhanced fuel-consumptions to generate more profits. According to the company, about US\$ 1,500/day from 6-7% lower bunker consumptions. However the cost of upgrades is estimated to be about US\$ 0.6 million per vessel.

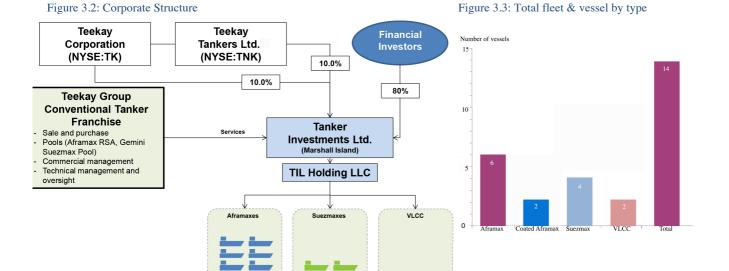
The company believes the current spread in value between newbuilding prices and second-hand crude tankers will improve the return on investment. Prices of new vessels have increased, hence second-hand vessels typically follow after, when the market reached historical average levels or higher, the company divests the group's tankers at appreciated prices (Tanker Investments Ltd, 2014). By participating in Teekay pooling arrangement, higher vessel utilization and daily revenues will generate more cash flow and profitability over time, compared to operate the vessels outside of the pooling arrangements. In a highly competitive sector it is important to satisfy the customers needs and maintain high reliability, safety, environmental and quality standards, which companies values high when they seek transportation partners.

3.1.6. Chartering Strategy

Tanker Investments Ltd. intends to operate the vessels in the Teekay Pools, where operators may enter into fixed-rate time charters decreasing the spot-rate exposure. Operating the vessels on fixed-time charters provides more predictable cash flows, compared to spot charters, which may generate increased profit margins at boom times.

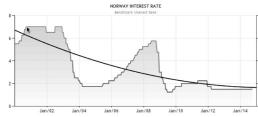
3.1.7. Corporate Structure

The corporate sturcture of Tanker Investments Ltd. is summarized in the figure. Below. Teekay Corporation and Teekay Tankers Ltd. placed US\$ 25 million each, currently worth 6.5% ownership each, the rest was privately placed from investors pre IPO. Additional US\$ 175 was raised during IPO at Oslo Stock Exchange.



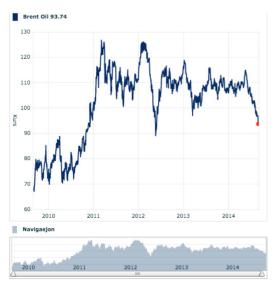
Source: Pareto Securities, Christopher

Figure 3.4: Interest Rates 2002 – 2014 (Norges Bank)



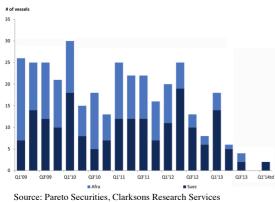
Source: Oslo Børs

Figure 3.5: Brent Oil Price 2010 - 2014



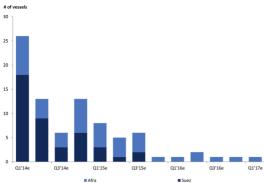
Source: Oslo Børs

Figure 3.6: Aframax and Suezmax Deliveries per Quarter



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Figure 3.7: Aframax and Suezmax Schedules deliveries per Ouarter



Source: Pareto Securities, Clarksons Research Service

3.2.1. Interest Rates

The interest rate in recent years has been low in both Europe and U.S. In Norway the interest rate is currently low, benefitting the industry to make new investments. In recent years, companies have benefitted from cheap loans, hence the interest rates will most likely increase, which means increased costs of loans. The higher cost of capital in the industry will most likely decrease new investments.

3.2.2. Oil Prices

The activity in the sector is in close relation to the oil price, Historical prices of oil have been relative high and stable in recent years, somewhere between US\$ 110 bbl and US\$120 bbl. However, over the summer, the oil price has declined to US\$ 93 bbl (MoneyWeek, 2014). Oil prices are at their lowest levels since 2012, and crude oil prices have been under pressure recent months. The global demand of oil is lower than expected, because of weaker growth in China and Europa.

3.2.3. Political Factors

International operations expose the industry to political, governmental and economic instability. Political instability may disrupt business in countries where the company is engaged in business. A significant portion of the world oil production of oil is from politically unstable regions. In recent times there has surged a conflict with Russia and the western countries. Russia is the biggest supplier of gas to Europe, with about a quarter of Europe's gas requirements through Ukraine. Sanctions have been imposed on Russia, leading to a bad political relation between Warsaw and Moscow (Daily Mail, 2014). Geopolitical events, such as wars, divert tankers from normal trading patterns to seek alternative ways of seaborn trade.

3.2.3. Suezmax/Aframax Market Specifics

The crude tanker market has been tough recent years due to excess capacity. On average 2.5 million dwt was delivered per quarter from Q1'2009 through Q2'2013. This is the same as 11 Suezmax vessels and 9 Aframax vessels. However the market has changed, only four Suezmaxes and two Afromaxes delivered since Q3 2013, and no new vessels delivered in Q4. However in the near-term deliveries of Suezmax and Aframax, many new orders are to arrive. We have to go in depth in the 2014-orderbook. As we can see from the figure, most of the deliveries are scheduled to arrive in Q1 2014 and Q3 2014. Looking at deliveries of new vessels from 2015-2016, we can clearly see a substantial decrease in orders.

The Suezmax orderbook is currently a total of 43 vessels, which equals approximately 10% of the existing fleet. However many are under construction at troubled yards, and will never arrive (Pareto, 2014). Of the total orders of 43 new Suezmax vessels, Rongsheng are to deliver 23 new vessels, which are accounted for in the 2014 orderbook. Rongsheng has not delivered any single crude tanker since June 2012, and will most likely not deliver the 23 Suezmaxes and 4 VLCCs. Adjusting the orderbook, approximately 4% of the fleet would arrive between Q4'2014 and Q3'2015, and similarly 34% of the Aframax orderbook will not enter global markets since the orders are to be built in either Iran or Brazil, or Jones Act (Pareto, 2014).

3.2.4. Suezmax/Aframax Fleet Age Profile

The market conditions have increased the scrapping activity in recent years, and 24 Suezmax vessels and 22 Aframax vessels have been scrapped the last two years. By looking at the age profile of the current fleet from the figure, nearly 20% is older than 15 years. The crude tanker fleet utilization will be sensitive to changes in productivity. Pareto Research has made an estimation of the crude tanker fleet utilization to 2016e, and we can see from the figure that the fleet utilization slightly increases towards 85%, which are levels not reached since 2009. In sum, about 175 vessels are 15 years or older, and the majority of these vessels will most likely be scrapped over the coming years, resulting in negative growth (Pareto, 2014).

3.2.5. Crude Tanker Market Outlook

Demand for crude oil remains solid, despite the uncertainties in the global macro situation. The demand of oil in China will increase from 10.1 mbd in 2013 to 12 mbd in 2018e (Pareto, 2014). Production remains flat around 4.2 mbd, which indicates increase in imports. The same pattern is also seen in the rest of Asia/Pacific region, where demand grows from 20 mbd in 2013 to 21.4 mbd in 2018e (Pareto, 2014). The production is expected to decline, which results in even more needs from increased imports.

US onshore crude oil production has increased and continues to growth. This has resulted in decline of US crude oil imports, which impacted the tanker market negatively. Since 2011, US onshore crude oil has increased by 0.9 mbd per year, reaching 6 mbd in 2014. This is expected to slow down from 2015. The exponential growth is difficult to sustain, and more investments are needed to compliment existing production. The US crude import was reduced from 9.2 mbd to 7.4 mbd between July 2011 and November 2013. This has reduced the seaborn imports of crude by 2 mbd over the past 2.5 years. The expected demand for crude tankers is to increase between 2 and 3% through 2016 by tankers from one region of the world to the other. See the estimated world oil production, demand and refinery capacity growth to 2018 summarized in the figure below.

North America

Frod Demand Refinery

Africa

Africa

Prod Demand Refinery

Africa

Prod Demand Refinery

Africa

Prod Demand Refinery

Rod Demand Refinery

Prod Demand Refinery

Figure 3.8: world oil production, demand and refinery capacity growth to 2018

Source: IEA, Pareto

Table 3.2: Influencing Factors on Demand

Influencing Factors on Demand

Demand for oil
Supply for oil
Regional availability
Changes in regional and global

Changes in regional and global economic conditions

Changes in transportation patterns

Source: Tanker Investments Ltd.

Table 3.3: Influencing Factors on Supply

Influencing Factors on Supply

Number of new vessels Scrapping rate of old vessels Conversion of tankers to other uses Number of vessels out of service Regulations

Source: Tanker Investments Ltd.

Economic Downturns

Economic downturns in the global financial markets may affect the customer's ability to charter vessels and/or result in default on current contracts and charters, which will have an effect on the company's business and result of operations.

Disruption of Oil Production

Wars or conflicts may affect the company's business may result in economic instability, which may affect the company's operations and ability to raise capital from the capital markets.

Political Instability

Since the company is operating internationally, the operations may be affected by economic and political conditions, which may harm it's business by tariffs, trade embargoes and economic sanctions.

Loss of property, Reputation and Business

The vessels are exposed to harsh weather conditions and risk associated with marine activity such as natural disasters and bad weather. There are also mechanical and human errors involved, which may result in death or loss of property. The company can be subject to delays in deliveries, large costs and governmental fines as a result of environmental disasters from oil spills, hence all linked to the company's reputation.

Environmental & other Regulations

Changes in regulations may affect the company by obtain certain permits and certificates of it's vessels. The ships may be induced to new requirements to upgrade ships to adapt to new regulations and requirements. If the company fails to adapt, it may be subject to limit the ability to do business and/or increase operating costs of the vessels.

3.3.1. Industry Risks

Volatile changes in Charter Rates

The crude and product tanker industries has been cyclical with volatility in charter-rates and represents large changes in the supply and demand for tanker capacity and changes in supply and demand for oil and tankers. In depressed market exposes the company to decrease in ship revenue and value of it's vessels, the factors are summarized in the table 3.2 and table 3.3.

Decrease in Demand for Vessels and Services

The company's vessels and services depend on global and regional oil markets, any changes in demand for tankers may affect the company's business. The market is known for it's volatility, and a slowdown of US and world economics may result in reduces consumption of oil product, which imposes directly a decrease in demand of the company's vessels, leading to reduced revenues from operations and decreased value of it's ships.

Highly Competitive Market

The company operates in a highly competitive international market in intense competition from strong players, which have substantially greater financial strength and capital compared to TIL. The key drivers to maintain an competitive advantage depends on price, location, size, age and condition of the vessel (TIL, 2014).

3.3.2. Operational Risks

Spot Charters

The company plans to operate the fleets in Teekay operated pools in the spot-charter market. It is important to obtain profitable operations, minimize time waiting for charters and spent loading/unloading vessels. Historical data shows periods the spot rates have declined below operational cost of operating the vessels. The company may hedge it's exposure to the volatile spot market by entering into freight forward agreements. By hedging the risk, the company would guarantee minimum revenues during bust times, but limits the company to make exceptional revenues at boom spot market rates.

Fleet Expansion

The company intends to acquire additional vessels in the future, however the company needs to borrow or raise capital to finance acquired vessels. There may be limitations of capital available by limiting financial conditions on the market, and there is no assurance the company will be able to expand it's operational fleet. The company may obtain high debt obligations and high interest expensed due to higher leverage of the firm. Raising capital by issuing additional securities, may result in increased shareholders ownership or dividend dilution (TIL, 2014).

Operating in Teekay Pools

The company intends to operate all it's vessels through Teekay Pools. The risk will be reduced, hence resulting in lower earnings compared to operating the vessels independently during boom periods of rising spot-charter rates. The pool may not earn enough revenue to cover cost in operation and debt payments of the vessels. There are no guarantees that the pool assure revenues earned will cover costs. However the company may elect to not operate the vessels in the pools in the future, hence not receive the benefits pool participations induces.

Seasonal Fluctuations

Historical data show that there are seasonal variations of demand in spot-charter rates, however this may lead to seasonable volatilities of operations. The tanker market is usually stronger during winter due to higher consumption of oil in northern hemisphere, and contrary during summer. Seasonal weather patterns may impose delays on vessel scheduling. As a result, revenues generated in Q1 and Q2 are weaker compared Q3 and Q4 (TIL, 2014).

3.3.3. Tax Risks

Norwegian Tax Authorities

The company is registered under the laws of the Republic of the Marshall Island, however if Norwegian shareholders control a company by at least 50% of it's shares, Norwegian shareholders may be subject to Norwegian taxation. The Norwegian taxation is currently at 27 percent on all income.

Additional Taxes

The company may be subject to additional taxation imposed in other jurisdictions the vessels are operating, which will reduce the company's revenue.

Part Four: The Theoretical Framework

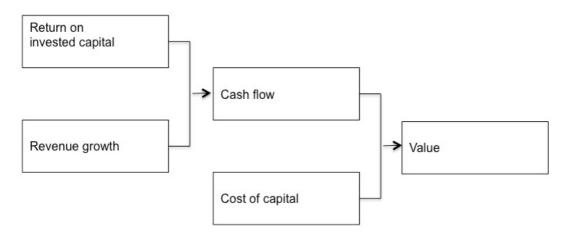
4.1. Fundamental Principles of Value Creation

4.1.1. Introduction

The fundamental principle to create value is investing capital at rates exceeding the cost of capital and generates future cash flow. Investors value companies by discounting their future cash flows at a discount rate that reflects the expectations and requirements the investors has to invest in the company. There are many risks and uncertainties involved by computing future cash flows, and it's crucial for the investors to assess the risk associated with the industry and operation to define a proper company valuation.

Companies must seek to exploit competitive advantages to create value for the long run, and the management must take actions creating long time value, and not just reaching short time goals to satisfy the board and investors. To create value it is important to have the right mix of growth and return on invested capitol (ROIC), and understand the relationship between cash flows, ROIC and value. The theoretical part is referenced the book repeatedly to the work of (Koller, Goedhart, & Wessels, 2010e) and Core Principles and applications of Corporate Finance (Jordan, Westerfield, & Ross, 2011)

Figure 4.1: Growth and ROIC Drive Value



Source: McKinsey & Company

4.1.2. Equity Markets

A stock market, also called equity market, is a network of economic transactions categorized by the country where the company is domiciled. A stock exchange is a place to trade stocks or other types of securities. The stock of a company represents the equity stake of it's owner, hence a unit of ownership. Large corporations usually have their stock listed on a stock exchange, such as Tanker Investments Ltd. on the Norwegian stock exchange, Oslo børs. However the stocks may be traded at stock exchanges in other countries, and is one of the most important ways for companies to raise capital in a liquid and publically traded market.

4.1.3. Drivers of Value

Companies create value for their owners by investing cash to generate more cash in the future. The value they create is the difference between cash in flows and cost of the investment made. A dollar today is worth more than a dollar tomorrow, because of the time value of money and risk associated to uncertainness of future cash flows. Value a company creates is governed by ROIC and growth of revenue over time. Figure 4.1 illustrates the core principle of value creation.

As seen in the figure above, ROIC and cash flow are tightly connected. A company can analyze the underlying drivers to understand it's financial performance by separating revenue growth and ROIC. A higher ROIC is always good, when high ROIC faster growth increases value. However when ROIC is lower than the company's cost of capital, faster growth destroys value through growth (Koller et al., 2010e). In general companies with a high ROIC, more value can be generated by increase the rate of growth, rather than ROIC. Companies with low ROIC, will generate more value by increasing their ROIC before growth. In general terms "companies must understand the pecking order of growth-related value creation that applies to it's industry and company type" (Koller et al., 2010e).

Management should focus on increasing cash flows rather than manipulate financial statements to look better for investors. The stock market is aware of how value is conserved, and is not fooled by manipulated reported accounting profit without increased cash flow. Anything that doesn't increase cash flows doesn't create value. The value of a company should not be affected by restructure of debt and equity ownerships unless the company's overall cash flows change.

4.1.4. Growth, Return on Invested Capital, and Cash Flow

In the business world there is a big focus on growth, and successful companies must grow to survive Fast-growing companies presents more opportunities for mangers and also attract more talent, and more likely to acquire slower-growing firms. It is a tremendous pressure on companies to grow. However, growth only creates value generate returns on invested capital (ROIC) greater than the cost of capital. Companies are constantly on the lookout for high-value-projects to grown larger and are more competitive in a highly competitive market (Koller, Goedhart, & Wessels, 2010d). It is important to position the right balance between growth and return on invested capital, which is critically important to value creation. Research done by McKinsey & Company shows that for companies with a high ROIC, shareholders return are affected more by an increase in revenue than an increase in ROIC (Koller, Goedhart, & Wessels, 2010c). The management needs to seek growth opportunities to create the most value defined by growth strategies.

There are large variations of average revenue among companies in the same industry, and management need to understand the reasons for variations in growth from the past and assess new market perspectives to future growth. The growth a company can be disaggregated into three main components (Koller et al., 2010c); *Portfolio momentum*, which is the organic revenue growth a company may achieve by expansion in the market segments represented by it's portfolio; *Market share performance*, is the organic growth by a company gaining or loosing share of a market. Managers tend to focus their attention on gaining market shares by optimizing and implementing new business models; and finally by *Mergers & Acquisition (M&A)*, by acquiring another company.

Larger companies have more difficulties on sustaining growth rather than ROIC, mainly because of natural life cycles of products and finding new product markets and enters them in time before the rest of the competitors see the opportunity. The annual world economic growth is typically less than 4 percent in real terms, and many companies' battles for the same growth potential. Companies need capital to grow, and publically traded companies are more liquid with more access to capital compared to privately held ones.

Companies with growth strategies based on organic new product development, have most often the higher return since they don't require extensive amount of new capital to invest. On the other side, acquisition of another company requires a larger part of the investment up front, and a premium added to interest the owners and eliminate other bidders. In return the rate of return is often only a small amount higher than it's cost of capital. Faster growth rarely helps a company's struggle with ROIC, an low returns typically indicates a poor industry structure, bad business model, or weak execution (Koller et al., 2010e).

4.1.6. Revenue Growth

To achieve the highest revenue growth depends on choosing the right strategy for either grow inorganically by acquiring another company, and choose the right markets to focus on. However as mentioned, growth does not necessarily create the most value. Taking marked shared at the expense of a competitor rarely create much value for the long run, unless competitors are pushed out or acquired. Established competitors can reposition themselves to respond to the threat and re-gain market shares by quickly copy new innovations or optimizing their business model. Shares of markets can lead to a cycle of give-and-take of market shares, and rarely shifts dramatically unless on of the competitors radically changes the product or it's delivery efficiently to force out a weaker competitor out of the market entirely (Koller et al., 2010c). Understanding the real potential of a company to grow revenues in the future it essential for valuating the firm. To maintain high growth over extensive period is clearly uncommon, and need to be reasonable in the valuation process of realistic future growth. The growth is exclusively driven by the growth of the markets they operate in.

4.1.7. Tax Deductions

However companies receives tax deductions by interest payments. The total amount of tax a company paid by a company is lower, resulting in higher cash flows available to pay debt obligations and shareholders. This comes with a risk, since the company needs to be liquid and have cash available to repay the debt on time. On the opposite side having debt is prevent companies to issue more debt for other attractive investment opportunities.

4.1.8. Managerial Implications

Conservation of value principles is useful for analyzing what to look for in a company that creates value. There are three useful applications for conservation of value principles; share repurchase, acquisitions, and financial engineering.

Share Repurchase is popular for companies to return cash to investors, and is a tactic for avoiding value destruction, but don't create value. Hence the arguments that management should repurchase shares when it's shares are undervalued reflecting it's underlying potential. It buys back shares today, and sells the stocks at adjusted market price. Value has not been created, only shifted shareholders.

Acquisitions creates only value when combined cash flows of the two companies increase due to cost reductions, accelerated revenue growth, or better use of fixed and working capital (Koller et al., 2010e).

Financial engineering can be the use of derivatives, structured debt, securitization, and off-balance-sheet financing. Some of the activities can generate value, hence not always.

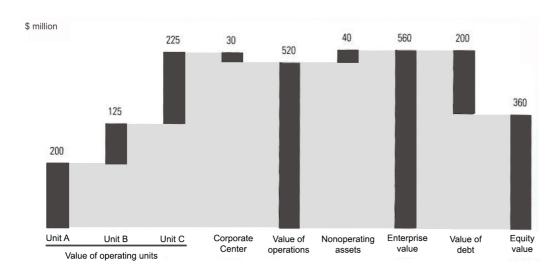


Figure 4.2: Enterprise Valuation of a Multibusiness Company

Source: McKinsey & Company

4.2. Valuation Techniques

There are several valuation approaches that can be applied to value a company, hence the models used in this valuation are asset-based valuation, enterprise discounted cash flow (DCF) valuation, and Real Option Valuation.

4.2.1. Asset-based Valuation

The asset-based valuation has focus on the company's current market value of it's net assets. The NAV identifies and summing the value of its assets, and the value of it's equity is calculated by deducting the debt value. The risk is only value of assets in the company's balance sheet is included, hence not value name, intellectual properties etc.

The NAV is a good approach to value a company, whose mostly owns marketable assets. The shipping has easy access to second-hand market, and easy to estimate their equity value. The Net Asset Value (NAV) model is best suited for companies whose assets are separable and marketable under the assumptions that the company will cease it's operations today or in the near future.

4.2.2. Enterprise Discounted Cash Flow Valuation

The enterprise DCF model discounts free cash flow, this means in general terms this is the cash flow available to all investors-equity holders, debt holders, and other nonequity investors, which is weighed at the weighed average cost of capital (WACC). The equity holder's value of the company is determined by subtracting issued debt and other claims on future cash flows. Figure 4.2 demonstrates an example of valuation of a company and the relationship between enterprise value and equity value. First valuate the enterprise and then subtract the value of nonequity financial claims. The valuation of a company's equity by using the enterprise DCF model is a four-part process(Koller, Goedhart, & Wessels, 2010b), such that:

1. Value Operation

Value the company's operations by discounting free cash flow at the weighted average cost of capital

2. Identify Assets

Identify and value nonoperating assets, such as excess marketable securities, nonconsolidated subsidiaries, and other equity investments. Summing the value of operations and nonoperating assets gives enterprise value.

3. Identify Financial Claims

Identify and value all debt and other nonequity claims against the enterprise value. Debt and other nonequity claims include (among others) fixed-rate and floating-rate debt, unfunded pension liabilities, employee options, and preferred stock

4. Subtract Financial Claims from Enterprise Value

Subtract the value of nonequity financial claims from enterprise value to determine the value of common equity. To estimate price per share, divide equity value by the number of current shares outstanding.

The present value of operation is derived by discounting each annual projected cash flow by the company's annual cash flow, and discounted by the appropriate discount factor. The enterprise DCF valuation process is an iterative process, which require separate and reorganize financial statements from operating items, nonoperating and capital structure to achieve the value of the company's operations. The historical performance of the company is analyzed to define the projected free cash flow in the short, medium, and long run. The Projected cash flow is discounted at the weighted average cost of capital.

Value Operations

The value of the company's operations equals the discounted value of the estimated future free cash flow. Free cash flow is the cash flow generated by the company's operations, less any reinvestment back into the business, which is independent of the capital structure of the company. The next step is to discount the free cash flow using the weighted average cost of capital, since the WACC represents the rates of return required by the investors in the company, which is the also the opportunity cost of funds.

Reorganize the financial statements

To build a robust valuation model, it's important to have a clear picture of the financial performance of the company. The return on invested capital (ROIC) and free cash flow (FCF) are critical to the valuation process, and have to be generated separately from the reported financial statements. ROIC and FCF measure the company's operating performance, financial statements mix operating performance, nonoperating performance, and capital structure.

The first step to calculate ROIC and FCF is to reorganize the accountant's financial statements into new statements that separate the operating items from, nonoperating items, and financial structure.

When reorganized, two new terms are derived: invested capital and net operating profit less adjusted taxes (NOPLAT). Invested capital represents the investor capital required to fund operations, independent on the financial structure of the company. NOPLAT represents the total after-tax operating income generated by the company's invested capital, which is available to all it's financial investors. ROIC is derived by dividing NOPLAT by average invested capital in the company from investors. The next step is to reorganize the financial statements to calculate free cash flow, which will also be the basis for the valuation.

Analyze the historical performance

When the company's financial statements are reorganized, the company's historical financial performance is analyzed throughout from the past to see how the company creates value and it's proper growth compared to market competitors. It's important to focus on key drivers of value, which is return on invested capital, revenue growth, and free cash flow. Reliable estimates on future cash flow are based on historical behaviors from the company's performance.

Project revenue growth, ROIC, and free cash flow

Build the enterprise DCF valuation and project revenue growth, return on invested capital, and free cash flow of the company. Free cash flow is driven by revenue growth and ROIC, and is the cornerstone for an enterprise DCF valuation. To forecast the company's free cash flow, the first step is to make a forecast of NOPLAT and invested capital.

Over the short run it is easier to make projections and forecast of each financial statement, however by moving further out in the horizon, individual line items become difficult to project and becomes more subjective to randomness in market behaviors, which cannot be foreseen. Over the medium horizon, five to ten years, the focus should be on the company's key performance drivers, such as operating margin, operating tax-rate and capital efficiency. To value cash flows beyond this point, use a continuing-value formula since it is impossible to project reasonable estimates for the long run.

Estimate continuing value

At a certain point predicting the individual key value drivers on a year-by-year basis becomes impractical and of no value, hence calculate a perpetuity-based continuing value based on the individual drivers, such that the value of operations equals the present value of free cash flow during explicit forecast period, plus the present value of free cash flow after explicit forecast period.

Although many continuing-value model exist, the preference goes to the key value driver formula since it's superior to alternative methodologies because it is based on cash flow and links cash flow directly to growth and ROIC.

Discount free cash flow at the weighted average cost of capital

To determine the value of operations, each year's forecast of free cash flow is discounted to determine the value of operations, which is consistent by the defined cash flows and discount factor. Consequently, the discount factor for free cash flow must represent the risk faced by all investors. The weighted average cost of capital (WACC) blends the rates of return required by debt holders (k_d) and equity holders (k_e) . For a company financed solely with debt and equity, the WACC is defined as follows:

Formula is as follows:

$$WACC = \frac{D}{D+E}kd(1-T_m) + \frac{E}{D+E}ke$$

Where debt (D) and equity (E) are measured using market values.

By calculating free cash flow as if the company were financed entirely with equity, operating performance across companies can be compared over time independent to it's capital structure to develop a clear picture of historical performance, which gives better performance measurements and forecasts. Companies funds operations with a mix of debt and equity, by increasing leverage of the company, debt rating drops by increase in equity risk.

Identify and Value Nonoperating Assets

Many companies own assets that have value but whose cash flows are not included in accounting revenue or operating profit. As a result, the cash generated by these assets is not part of free cash flow and must be valuated separately.

Identify and Value Nonequity Claims

To convert enterprise value into equity value, subtract any nonequity claims, such as short-term and long-term debt.

Value Equity

Take the identified and valued nonequity claims, and subtract the claims from the enterprise value to determine equity value. To value Company's common equity, subtract each of these claims from the Company's enterprise value.

Value Per Share

The company's value per share is achieved by dividing the estimated total equity value by the number of undiluted shares outstanding (undiluted shares). The value of convertible debt and employee stock options separately.

4.2.3. Real Option Valuation

The real-option (ROV) model is based on formal option-pricing models and forecast future cash free cash on future states of the world the world and management decisions discounted into today's value. Real-option valuation cannot replace traditional discounted cash flow, since valuing an option is based on knowing the value of the underlying assets. The real-option based valuating is well suited to decisions in commodity-based businesses, such as shipping of crude oil.

The ROV model value complex contingent cash flow patterns and weight the future cash flows by risk-adjusted probabilities of the scenarios to occur. The company's future cash flows can be exposed to a wide range of risks, such as demand risk, interest and currency risk, and political risk, affecting the market (Koller, Goedhart, & Wessels, 2010g). The steps for valuing the flexibility is as follows:

1. Value

Conduct a valuation of the investment without flexibility using traditional DCF model. Estimate NPV without flexibility, then compute base-case present value without flexibility.

2. Expand

Expand the DCF model into an event tree to map how the value evolves over time by using probabilities and the weighed average cost of capital, and then model the uncertainty in an event tree to understand how present value develops with respect to changing uncertainty.

3. Identify

Turn the event tree into a decision tree by identifying the flexibility available, incorporate the options into the tree, and model the flexibility in a decision tree. Analyze the event tree to identify and incorporate managerial flexibility to respond to new information.

4. Reorganize

Recognize how the flexibility alters the risk profile and Estimate contingent NPV, then value the total project using the ROV approach.

4.2.5. Cost of equity – Capital Asset pricing model (CAPM)

The capital asset pricing model is important for investors to determine the theoretical appropriate required rate of return of the investment. The equation shows the relationship between expected return and beta (Jordan et al., 2011).

The formula is as follow:

$$R(i) = R(f) + (R(m) - R(f)) \times \beta(i)$$

Where: R(i) is the equity cost of capital for company (i), R(f) is the risk free rate, R(m) is the market return, and β (i) is the beta value for company (i).

4.2.6. Risk free rate

The risk free interest rate is the rate of return on an investment with no risk of financial loss, this represent the interest the investor should expect from an investment with no risk over a given period of time. In practice the risk free rate is the rate on notably US bonds. However, in recent years the US government had several financial problems, and may not be risk free. The US governmental bonds are backed by the larges economy of the world, which can print it's own currency, hence cannot default on it's debt. The 30 year US bonds will be used to reference the risk free rate (Jordan et al., 2011). The current US 30-year yield is currently at 3.38%, which will be referenced at the risk free rate.

4.2.7. Market premium

The market premium is the expected return from a market portfolio with subtraction of the risk free rate. There are arguments, of which is the correct market premium. A study done by PricewaterHouseCoopers estimated a market premium of 5% for Oslo Stock Exchange (PWC, 2013), hence the calculations will be based on the expected market premium of 5%

4.2.8. Beta

The beta of an investment is a measure of risk from exposure to general market movements. The beta can indicate how the stock reacts to changes in the market. If a company's beta is less than 1, it will be less volatile than the market, and contrary if it is larger than 1, it will be more volatile. To estimate the beta of a stock, the price of the stock must be compared to the market index over extensive period of time (Jordan et al., 2011). However, as a general rule, 60 months are used, hence since Tanker Investments Ltd. recently wen public, this is not an option

The formula is as follow:

$$\beta = \frac{cov(r(i), R(m))}{Variance \ R(m)}$$

Where R(i) is the equity cost of capital for company (i), and R(m) is the market return.

4.3. Valuation of Cyclical Companies

A cyclical company whose earnings demonstrate large fluctuations in a repeating pattern by increase or decrease earnings driven by market behavior. In this context the historical performance must be assessed and interpret key drivers of the market cycles. However, historical data does not indicate how the market will respond and long-time performance.

4.3.1. Share price behavior

The share price of companies in cyclical industries tend to be more volatile, but their discounted cash flow (DCF) valuations are much more stable. Since the cyclical company does not possess insights about the future industry cycles, any single year is unimportant. The high cash flows in boom markets cancel out the low cash flows in bust markets, and only the long-term trend really matters. To illustrate a 10 year business cycle in a highly cyclical industry. Part 1, shows the company's hypothetical cash flow pattern, which is highly volatile. Part 2, shows the DCF values at 10 percent. Part 3, compares the cash flows and the foresight of the DCF values. From the figure we can see that the DCF value almost displays no volatility from any single year's performance for the valuation of the company. However the share price of cyclical companies in the real world are less stable, The share prices are more volatile than the DCF approach, hence biased on current earnings (Koller, Goedhart, & Wessels, 2010f).

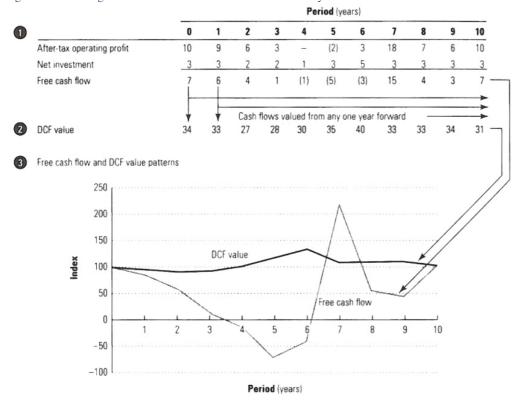


Figure 4.3: The long-term view: free cash flow and DCF volatility

Source: McKinsey & Company

4.3.2. Cyclical Industries Behavior

McKinsey & Company did a study on companies in cyclical industries to see the equity analyst's forecast and clues to the stock price to these companies. The study revealed that consensus earnings from cyclical companies appeared to ignore cyclicality entirely, and DCF model was inconsistent with the facts, and the future expectations and cash flow projections of the market were incorrect. The forecasts didn't even acknowledge the existence of a cycle. The reason for this might be incentives to avoid predicting upcoming bust cycles, hence damage the relations between the analyst's employers and particular companies (Koller et al., 2010f). Since forecasting of cyclical companies is impossible, a reasonable valuation approach is to build scenarios and weight heir values. Suppose a 50 percent probability that the industry will turn down in the next year, and a 50 percent probability that the market will improve and enter a long-term trend. The value of the company should be the weighted average of these two values. The probabilistic approach avoids the traps of single forecasts and allows wider ranges of outcomes for a better valuating of the company.

4.3.3. Valuing Cyclical Companies Approach

For valuing cyclical companies, a two-scenario (or more) approach in a four-step process can be assessed (Koller et al., 2010f).

1. Construct Cycle Scenario

Construct and value the normal cycle scenario from historical data paying attention to long-term trends of operating profits, cash flows and ROIC, since they have the largest impact on the valuation by continuing values based on normalized values.

2. Construct Trend Scenario

Construct and value a new trend scenario based on recent performance of the company, the focus is on long-term trend line without too much focus on upcoming cycles.

3. Develop Economic Rational

Develop an economic rational for each of the two scenarios with factors such as demand growth, and companies entering or exiting the industry and balance of supply and demand.

4. Assign Probabilities

Assign probabilities to the scenarios, and calculate their weighted value. Use economic rationale and it's likelihood to each scenario.

4.3.4. Summary of Cyclical Industries

Evidence suggests that in many cyclical industries, the companies themselves are the main drivers behind the cyclic nature of the industry. Since managers have detailed information of the industry, they should be able to see a cycle coming and take appropriate actions. However in a boom market when prices are high and more cash is available, large investments are made due to concerts of growth of the rivals giving wrong indications and confusing the stock market (Koller et al., 2010f)

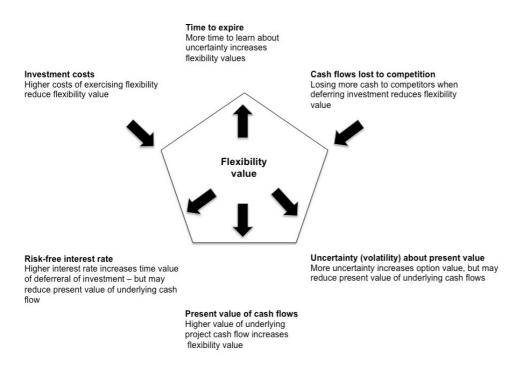
4.4. Valuing Flexibility

In valuing companies it is important to add the value of managerial flexibility into the DCF model. A standard DCF approach is based on a single cash flow, or even several projected scenarios and outcomes. However the scenarios does not calculate what that impact, in the valuation the flexibility refers to "choices between alternative plans that managers may make In response to events" (Koller et al., 2010g). For example how the management will react to bust markets at low rates, barely covering operational expenses with small or no profit margins. In such events, management must respond flexibly to future events and how to value these flexibilities since special events may change the course and future of the whole company (Koller et al., 2010f).

4.4.1. Key Drivers

The drivers of value show the value of flexibility to respond to specific events. Holding other drivers constant, the value of option decreases with higher investment costs, and more cash flows lost during holding the option. The option value increase when higher value of the underlying assets' cash flows, greater uncertainties, higher interest rates and longer lifetime of an option. Even small changes of uncertainty and interest rates plays an important role when assessing valuation of the assets, hence take into considerations both direct and indirect uncertainty and effects (Koller et al., 2010g). To value flexibility it is important to identify and understand the key drives of the value of real options, which depends on six parameters, summarized in figure 4.4.

Figure 4.4: Drivers of Flexibility Value



Source: McKinsey & Company

4.4.2. Classify the Flexibility

In real life the flexibility is not well defined and as straightforward and a lot depends on the management's ability to recognize, structure and manage flexibility based on events, decisions and payoffs for each outcome. The key for management's flexibility value is when they are able to manage it, and take new directions based on disappointing market behaviors. There are many options management can turn into proper value of flexibility, such as the option to defer investments (buy ships), option to abandon (sell or scrap ship), option to extent or shorten asset or contract (hedging), and option to switch off operation (wait for better rates) (Koller et al., 2010f).

4.5. Risk Valuation

There is always risk associated with estimating a company's future cash flow, the risk enters into valuation through the company's cost of capital (price of risk), and the uncertainty of future cash flows. This is in particular an important topic for investors and managers.

4.5.1. Price of Risk

The cost of capital is the price charged by investors for taking the risk of a company's anticipated future cash flow may deviate from projected cash flows when they made the investment. The cost of capital to a company is equal to the minimum return the investors expect to earn from making the investment in the company. The *cost of capital* is also called the discount rate, since it discount future cash flows at determined rate when calculating the present value of an investment. This is to reflect what it will cost to pay required return to investors. A well-known method to reduce risk in a portfolio is diversification, spreading the risk over several different investments, however exposure to economic cycles cannot be diversified (Koller et al., 2010e).

4.5.2. Cash Flow Risk

Companies must manage their cash flows and identify the risk the company faces in close relation to their future cash flows. Management needs to be aware that miscalculations may compromise the company. Companies arbitrarily add a risk premium to the cost of capital, but have no way to measure if it is reasonable accurate (Koller et al., 2010e). Theoretical models focusing on expected values may hide important information of certain outcomes. In theory all investments with a positive expected value, independent of upside and downside risk, should be invested in. It is important to be wise and not only trust the numbers, but also read between the lines. Companies should not take on risk that may jeopardize the company's future at risk, or affecting the rest of a company in a negative way.

4.5.3. Hedging Risk

The company may hedging by looking at today's prices for two year time horizon, with the option to hedge commodities in a fluctuating market. However by reducing the short-term cash flow volatility have a little effect on long-term cash flows (Koller et al., 2010e).

Part Five: Financial Analysis

5.1. Framework for estimates

To budget and estimate future cash flows of a company, it's common practice to review historical performance and cash flow statements to make estimates to forecast future performance and growth of the company. However it's arguable to use historical average charter-rates to forecast future performance in highly unpredictable sector. Tanker Investments Ltd., recently went public, hence there are limited historical data from the company. The estimates will be based on current market sentiments in correlation with second quarter reported results (Tanker Investments Ltd., 2014). The Assumptions and estimates are based on macroeconomic developments and market sentiments. The estimates will be to 2016, since it's of no value to try to estimate further ahead of time in this sector. To assign a growth rate to Tanker Investments Ltd.'s future income based on historical accounting numbers from the sector will not respond to the market. The company's strategy to acquire and sell vessels at most convenience times, hence makes it hard to forecast the operational cash flow from vessels (FCFF). The estimates will be based ion FCFF from the company's current vessels, and corrected for depreciations and investments. The expenses will be deducted from vessels revenue, and total FCFF for Tanker Investments Ltd.

5.1.1. Income

Charter rates

The vessels are operated in Teekay managed pools at spot rates, hence mentioned in earlier chapters. The vessels are assumed to operate on the spot market. The rates are highly uncertain, and by there are of no value to estimate rates further than 2016e in time, however the 10Y average spot rates will be used to reach a more convenient average spot rates. The 10Y average charter rates are: Aframax (25,000), Suezmax (41,000) and VLCC (48,000). By doing this the highs and lows will cancel out each other, and reach a more convenient rate to base the calculations on. A sensitivity analysis will be used to check for changes in the market and how the assumptions change the valuation of the company.

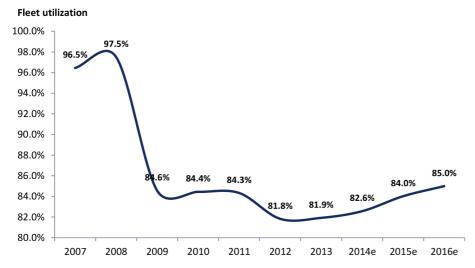
Table 1.1: Pareto crude tanker spot rate estimates

Average spot rates		2011	2012	2013	2014e	2015e	2016e
Aframax	USD/day	11,400	15,700	15,900	19,500	22,500	27,500
Suezmax	"	15,700	14,600	13,800	22,000	27,500	35,000
VLCC	"	13,500	14,900	14,400	27,500	32,500	40,000

Fleet utilization

The utilization of the fleet is based on estimated made by Pareto Securities, respectively 82,6% in 2014e, 84% in 2015e and 85% in 2016e (Pareto, 2014). In the following years after 2016, the utilization will be estimated to be 80%, allowing for downtime and maintenance between contracts. The utilization rate is highly uncertain, hence set at a lower rate.

Figure 5.1: Fleet utilization estimate



Source: Pareto Securities

5.1.2. Expenses

Operational cost

All the operational cost per ship is projected as total operating expenses, which includes voyage expenses, vessel operating expenses, general- & administrative expenses. However, depreciation and amortization are stated separately.

Dry dock

The company dry-docks each vessels every two and a haft to five years. The costs during dry docking is amortized on a straight line basis over their estimated life

Interest

The weighed average interest rate on the company's long-term debt is 3,64% (Tanker Investments Ltd., 2014), hence will be used in the calculations. The interest rate and cost of debt is low, hence the debt comes from Teekay Corporation, which have large ownership in Tanker Investments Ltd. The interest rate fluctuates with the market.

Income tax

The company believes that it and it's subsidiaries are not subject to taxation under the republic of The Marshall Island, and qualify for the section 883 exemptions for U.S. federal income tax purposes, which states the following: "Gross income derived by a corporation organized in a foreign country from the international operation of a ship or ships if such foreign country grants an equivalent exemption to corporations organized in the United States" (26 U.S. Code § 883, 2014). However, an income tax rate of 3% will be used in the calculations based on the gross revenue tax on The Marshall Islands (International Monetary Fund, 2008).

Vessel depreciation

The vessels are depreciated on a straight-line basis over a vessel's estimated useful life. The depreciation is calculated using and estimated useful life for a vessel of 25 years. The 14 vessels are fully owned by the company, and the salvage value of the ships will be set to the current value of scrap, see table below.

Table 5.1: Annual depreciation for existing vessels

				Implied per	Salvage value	Depreciation
Vessel name	Type	Size (dwt)	Rem. life	unit (USDm)	(USDm)	per year
Tarbet Spirit	Aframax	107 529	20	36,80	8	1,84
Emerald Spirit	44	109 000	20	28,50	8	1,43
Garibaldi Spirit	"	109 000	20	28,50	8	1,43
Whistler Spirit	"	109 000	21	29,50	8	1,40
Blackcomb Spirit	"	109 000	21	29,50	8	1,40
Peak Spirit	"	104 000	22	46,10	8	2,10
Hovden Spirit	Coated Aframax	105 276	23	47,50	8	2,07
Trysil Spirit	"	105 276	23	47,50	8	2,07
Tianlong Spirit	Suezmax	159 000	20	40,80	11	2,04
Jiaolong Spirit	"	159 000	20	40,80	11	2,04
Shenlong Spirit	"	159 000	20	40,80	11	2,04
Dilong Spirit	"	159 000	20	40,80	11	2,04
Hemsedal Spirit	VLCC	320 106	21	77,00	21	3,67
Voss Spirit	"	320 041	21	77,00	21	3,67

Source: Christopher, Tanker Investments Ltd.

Dividend

The company has not history of dividend, and it's also not an important factor in this valuation of Tanker Investments Ltd., hence future dividends not projected in the calculations.

Consolidated balance sheet

Consolidated balance sheet from second quarter 2014 results can be views in the appendix, however it is important to note that the balance sheet is just until May 30, 2014 (Q2).

Equity

The company does not intend to raise further equity.

Working Capital

The company's working capital is the current assets less the current liabilities. Tanker Investments Ltd. does not carry stock of goods, hence assumes no changes in working capital over the coming years.

5.2. Return

Cost of equity – Capital Asset pricing model (CAPM)

The capital asset pricing model is important for investors to determine the theoretical appropriate required rate of return of the investment. The equation shows the relationship between expected return and beta (Jordan et al., 2011).

The formula is as follow:

$$R(i) = R(f) + (R(m) - R(f)) \times \beta(i)$$

Where: R(i) is the equity cost of capital for company (i), R(f) is the risk free rate, R(m) is the market return, and β (i) is the beta value for company (i).

Risk free rate

The risk free interest rate is the rate of return on an investment with no risk of financial loss, this represent the interest the investor should expect from an investment with no risk over a given period of time. In practice the risk free rate is the rate on notably US bonds. However, in recent years the US government had several financial problems, and may not be risk free. The US governmental bonds are backed by the larges economy of the world, which can print it's own currency, hence cannot default on it's debt. The 30 year US bonds will be used to reference the risk free rate (Jordan et al., 2011). The current US 30-year yield is currently at 3.38%, which will be referenced at the risk free rate.

Table 5.3: Risk free rate

Date	3 Year yield	7 Year yield	10 year yield	20 year yield	30 Year yield
25.06.2014	1.68%	2.17%	2.57%	3.12%	3.38%

Source: U.S. Department of the Treasury

Market premium

The market premium is the expected return from a market portfolio with subtraction of the risk free rate. There are arguments, of which is the correct market premium. A study done by PricewaterHouseCoopers estimated a market premium of 5% for Oslo Stock Exchange (PWC, 2013), hence the calculations will be based on the expected market premium of 5%

Beta

The beta of an investment is a measure of risk from exposure to general market movements. The beta can indicate how the stock reacts to changes in the market. If a company's beta is less than 1, it will be less volatile than the market, and contrary if it is larger than 1, it will be more volatile. To estimate the beta of a stock, the price of the stock must be compared to the market index over extensive period of time (Jordan et al., 2011). However, as a general rule, 60 months are used, hence since Tanker Investments Ltd. recently wen public, this is not an option

$$\beta = \frac{cov(r(i), R(m))}{Variance \ R(m)}$$

Where R(i) is the equity cost of capital for company (i), and R(m) is the market return.

5.3. Estimates

Beta

The beta value was calculated by finding the covariance between Oslo Stock Exchange and Tanker Investments over the last year. The beta value was estimated to be 0,7516, which means that the stock is less volatile than the market. See the table below for the values

Table 5.4: Estimated beta

Covariance	0,000044987078
Variance	$0,\!000059848154$
Beta value	0,751686980978

The beta calculated is considered very low compared to competing companies from the same sector, since the beta was estimated not by the right terms, a more appropriate beta will be used compared to the sector. Bloomberg has an index of average sector beta, which will be used for a more accurate valuation. The beta used in the calculations is 1,50 based on sector average of 2014 (Bloomberg, 2014).

The beta will be set to 1,50

The cost of equity

The risk free rate for the U.S. Department of Treasury is 3,38% and the, market risk premium at Oslo Stock Exchange, estimated by PWC is 5,00%, and the beta is estimated to be 0,75. The calculation gives an equity cost of capital of.

$$R(i) = 3.38 + (5.00) \times 1.5 = 10.88\%$$

The expected return is quite low in a highly volatile sector, hence a more appropriate value from a similar company in the same sector, Golar LNG.

The 10-year annualized returns are averaging from -20,92% (Frontline) to 17,30% (Golar LNG) (Buyupside, 2014).

The expected return will be set to 17,30%

Cost of capital

The cost of capital is stated in the financial statements from Tanker Investments Ltd., which is stated at 3,64% (Tanker Investments Ltd., 2014). The debt interest rate is low, since this is a debt directed to Teekay, which has significant ownerships in Tanker Investments Ltd.

The weighted average cost of capital

The WACC is calculated by the market value of equity and debt. From the stock quote as per market close June 30 is US \$11,14. There are 38,400,000 shares of TIL, hence the market value is US\$ 428,245,316. The tax rate in the calculation is the income tax (3%)

$$WACC = \frac{229,897,000}{658,142,316} \times 0.0364 \times (1 - 0.03) + \frac{428,245,316}{658,142,316} \times 0.1730 = 12,49\%$$

The calculated WACC is 12,49%

5.3. Calculation of discounted cash flow

The discounting period is 0,5 the first year, and 1,5 the second year and so on. The discounted cash flow to firm is calculated by the following formula:

Discounted cash flow to firm =
$$\frac{Cash\ flow\ to\ total\ capital}{(1+WACC)^{discount\ period}}$$

The cash flow is discounted to firm every year of remanding lifetime of the vessels before they are sold as scrap, the scrap value is set to the same as todays salvage value. The calculations for 2014e, is for Q3 and Q4. The reported second quarter reports by Tanker Investments Ltd., and is added to the cash flows at the end of the valuation. The vessels cash flow are estimated and demonstrated in summary below (See appendix for complete sheets):

5.3.1. 6x Aframax vessels

Vessel name: Tarbet Spirit Vessel type: Aframax Remaiding life: 20 years

USDm	2014	2015	2016	2017	2018	2019	2020	•••	2034
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	7 300 000		7 300 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%		80,00%
Depreciation	1 840 000	1 840 000	1 840 000	1 840 000	1 840 000	1 840 000	1 840 000		1 840 000
EBIT	1 059 260	5 099 563	6 691 875	5 460 000	5 460 000	5 460 000	5 460 000		5 460 000
Tax	31 778	152 987	200 756	163 800	163 800	163 800	163 800		163 800
NOPLAT	1 027 482	4 946 576	6 491 119	5 296 200	5 296 200	5 296 200	5 296 200		5 296 200
Depreciation	1 840 000	1 840 000	1 840 000	1 840 000	1 840 000	1 840 000	1 840 000		1 840 000
Salvage value									8 000 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136		1 164 136
Change in working capital	0	0	0	0	0	0	0		0
CF to total capital	1 091 038	5 252 549	6 892 631	5 623 800	5 623 800	5 623 800	5 623 800		5 623 800
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50		20,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125		0,125
DCF to total capital	1028686	4402499	5135707	3725042	3311443	2943766	2616914		503726
Sum of DCF to total capital	24 384 347								

Vessel name: Emerald Spirit Vessel type: Aframax Remaiding life: 20 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 034
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000
EBIT	1 469 260	5 509 563	7 101 875	5 870 000	5 870 000	5 870 000	5 870 000	5 870 000
Tax	44 078	165 287	213 056	176 100	176 100	176 100	176 100	176 100
NOPLAT	1 425 182	5 344 276	6 888 819	5 693 900	5 693 900	5 693 900	5 693 900	5 693 900
Depreciation	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000
Salvage value								8 000 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	1 513 338	5 674 849	7 314 931	6 046 100	6 046 100	6 046 100	6 046 100	6 046 100
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	20,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	1426852	4756456	5450363	4004761	3560104	3164818	2813422	541552
Sum of DCF to total capital	26 434 892							

Vessel name: Garibaldi Spirit Vessel type: Aframax Remaiding life: 20 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 034
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000
EBIT	1 469 260	5 509 563	7 101 875	5 870 000	5 870 000	5 870 000	5 870 000	5 870 000
Tax	44 078	165 287	213 056	176 100	176 100	176 100	176 100	176 100
NOPLAT	1 425 182	5 344 276	6 888 819	5 693 900	5 693 900	5 693 900	5 693 900	5 693 900
Depreciation	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000	1 430 000
Salvage value								8 000 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	1 513 338	5 674 849	7 314 931	6 046 100	6 046 100	6 046 100	6 046 100	6 046 100
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	20,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	1426852	4756456	5450363	4004761	3560104	3164818	2813422	541552
Sum of DCF to total capital	26 434 892							_

Vessel name: Whistler Spirit Vessel type: Aframax Remaiding life: 21 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 035
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000
EBIT	1 499 260	5 539 563	7 131 875	5 900 000	5 900 000	5 900 000	5 900 000	5 900 000
Tax	44 978	166 187	213 956	177 000	177 000	177 000	177 000	177 000
NOPLAT	1 454 282	5 373 376	6 917 919	5 723 000	5 723 000	5 723 000	5 723 000	5 723 000
Depreciation	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000
Salvage value								800 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	1 544 238	5 705 749	7 345 831	6 077 000	6 077 000	6 077 000	6 077 000	6 077 000
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	21,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	1455986	4782355	5473387	4025228	3578299	3180993	2827801	483883
Sum of DCF to total capital	25 871 632							

Vessel name: Blackcomb Spirit Vessel type: Aframax Remaiding life: 21 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 035
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000
EBIT	1 499 260	5 539 563	7 131 875	5 900 000	5 900 000	5 900 000	5 900 000	5 900 000
Tax	44 978	166 187	213 956	177 000	177 000	177 000	177 000	177 000
NOPLAT	1 454 282	5 373 376	6 917 919	5 723 000	5 723 000	5 723 000	5 723 000	5 723 000
Depreciation	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000	1 400 000
Salvage value								8 000 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	1 544 238	5 705 749	7 345 831	6 077 000	6 077 000	6 077 000	6 077 000	6 077 000
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	21,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	1455986	4782355	5473387	4025228	3578299	3180993	2827801	483883
Sum of DCF to total capital	26 444 933							

55

Vessel name: Peak Spirit Vessel type: Aframax Remaiding life: 22 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 036
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	2 100 000	2 100 000	2 100 000	2 100 000	2 100 000	2 100 000	2 100 000	2 100 000
EBIT	799 260	4 839 563	6 431 875	5 200 000	5 200 000	5 200 000	5 200 000	5 200 000
Tax	23 978	145 187	192 956	156 000	156 000	156 000	156 000	156 000
NOPLAT	775 282	4 694 376	6 238 919	5 044 000	5 044 000	5 044 000	5 044 000	5 044 000
Depreciation	2 100 000	2 100 000	2 100 000	2 100 000	2 100 000	2 100 000	2 100 000	2 100 000
Salvage value								8 000 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	823 238	4 984 749	6 624 831	5 356 000	5 356 000	5 356 000	5 356 000	5 356 000
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	22,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	776191	4178039	4936169	3547659	3153755	2803587	2492299	379121
Sum of DCF to total capital	22 833 093							

5.3.2. 2x Coated Aframax vessels

Vessel name: Hovden Spirit Vessel type: Coated Aframax Remaiding life: 23 years

Remarding inc. 25 years								
USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 037
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000
EBIT	829 260	4 869 563	6 461 875	5 230 000	5 230 000	5 230 000	5 230 000	5 230 000
Tax	24 878	146 087	193 856	156 900	156 900	156 900	156 900	156 900
NOPLAT	804 382	4 723 476	6 268 019	5 073 100	5 073 100	5 073 100	5 073 100	5 073 100
Depreciation	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000
Salvage value								8 000 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	854 138	5 015 649	6 655 731	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	23,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	805325	4203938	4959193	3568126	3171950	2819761	2506677	338970
Sum of DCF to total capital	22 877 340							

Vessel name: Trysil Spirit Vessel type: Coated Aframax Remaiding life: 23 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 037
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000
EBIT	829 260	4 869 563	6 461 875	5 230 000	5 230 000	5 230 000	5 230 000	5 230 000
Tax	24 878	146 087	193 856	156 900	156 900	156 900	156 900	156 900
NOPLAT	804 382	4 723 476	6 268 019	5 073 100	5 073 100	5 073 100	5 073 100	5 073 100
Depreciation	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000
Salvage value								8 000 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	854 138	5 015 649	6 655 731	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	23,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%
DCF to total capital	826770	4548806	5655611	4288803	4018367	3764984	3527578	1 165 751
Sum of DCF to total capital	29527909							

5.3.3. 4x Suezmax vessels

Vessel name: Tianlong Spirit Vessel type: Suezmax Remaiding life: 20 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	 2 035
EBITDA	3 270 960	8 481 688	10 858 750	11 972 000	11 972 000	11 972 000	11 972 000	11 972 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000
EBIT	1 230 960	6 441 688	8 818 750	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000
Tax	36 929	193 251	264 563	297 960	297 960	297 960	297 960	297 960
NOPLAT	1 194 031	6 248 437	8 554 188	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000
Salvage value								11 000 000
Maintenance	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	1 267 889	6 634 938	9 083 313	10 229 960	10 229 960	10 229 960	10 229 960	10 229 960
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	21,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	1195430	5561168	6767986	6776029	6023672	5354851	4760291	814563
Sum of DCF to total capital	38129867							

Vessel name: Jialong Spirit Vessel type: Suezmax Remaiding life: 20 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	 2 035
EBITDA	3 270 960	8 481 688	10 858 750	11 972 000	11 972 000	11 972 000	11 972 000	11 972 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000
EBIT	1 230 960	6 441 688	8 818 750	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000
Tax	36 929	193 251	264 563	297 960	297 960	297 960	297 960	297 960
NOPLAT	1 194 031	6 248 437	8 554 188	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000
Salvage value								11 000 000
Maintenance	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	1 267 889	6 634 938	9 083 313	10 229 960	10 229 960	10 229 960	10 229 960	10 229 960
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	21,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	1195430	5561168	6767986	6776029	6023672	5354851	4760291	814563
Sum of DCF to total capital	38 129 867							

Vessel name: Shenlong Spirit Vessel type: Suezmax Remaiding life: 20 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	•••	2 035
EBITDA	3 270 960	8 481 688	10 858 750	11 972 000	11 972 000	11 972 000	11 972 000		11 972 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%		80,00%
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000		2 040 000
EBIT	1 230 960	6 441 688	8 818 750	9 932 000	9 932 000	9 932 000	9 932 000		9 932 000
Tax	36 929	193 251	264 563	297 960	297 960	297 960	297 960		297 960
NOPLAT	1 194 031	6 248 437	8 554 188	9 634 040	9 634 040	9 634 040	9 634 040		9 634 040
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000		2 040 000
Salvage value									11 000 000
Maintenance	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623		1 457 623
Change in working capital	0	0	0	0	0	0	0		0
CF to total capital	1 267 889	6 634 938	9 083 313	10 229 960	10 229 960	10 229 960	10 229 960		10 229 960
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50		21,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125		0,125
DCF to total capital	1195430	5561168	6767986	6776029	6023672	5354851	4760291		814563
Sum of DCF to total capital	38 129 867								

Vessel name: Dialong Spirit Vessel type: Suezmax Remaiding life: 20 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	 2 035
EBITDA	3 270 960	8 481 688	10 858 750	11 972 000	11 972 000	11 972 000	11 972 000	11 972 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000
EBIT	1 230 960	6 441 688	8 818 750	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000
tax	36 929	193 251	264 563	297 960	297 960	297 960	297 960	297 960
NOPLAT	1 194 031	6 248 437	8 554 188	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000
Salvage value								11 000 000
Maintenance	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	1 267 889	6 634 938	9 083 313	10 229 960	10 229 960	10 229 960	10 229 960	10 229 960
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	21,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	1195430	5561168	6767986	6776029	6023672	5354851	4760291	814563
Sum of DCF to total capital	38 129 867							

5.3.4. 2x VLCC vessels

Vessel name: Hemsedal Spirit Vessel type: VLCC Remaiding life: 21 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	 2 035
EBITDA	4 088 700	10 023 813	12 410 000	14 016 000	14 016 000	14 016 000	14 016 000	14 016 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000
EBIT	411 700	6 346 813	8 733 000	10 339 000	10 339 000	10 339 000	10 339 000	10 339 000
Tax	12 351	190 404	261 990	310 170	310 170	310 170	310 170	310 170
NOPLAT	399 349	6 156 408	8 471 010	10 028 830	10 028 830	10 028 830	10 028 830	10 028 830
Depreciation	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000
Salvage value								21 000 000
Maintenance	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	424 051	6 537 217	8 994 990	10 649 170	10 649 170	10 649 170	10 649 170	10 649 170
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	21,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	399817	5479261	6702177	7053701	6270514	5574286	4955361	847943
Sum of DCF to total capital	38 955 190							

Vessel name: Voss Spirit Vessel type: VLCC Remaiding life: 21 years

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	 2 035
EBITDA	4 088 700	10 023 813	12 410 000	14 016 000	14 016 000	14 016 000	14 016 000	14 016 000
Time in operation	82,60%	84,50%	85,00%	80,00%	80,00%	80,00%	80,00%	80,00%
Depreciation	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000
EBIT	411 700	6 346 813	8 733 000	10 339 000	10 339 000	10 339 000	10 339 000	10 339 000
Tax	12 351	190 404	261 990	310 170	310 170	310 170	310 170	310 170
NOPLAT	399 349	6 156 408	8 471 010	10 028 830	10 028 830	10 028 830	10 028 830	10 028 830
Depreciation	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000
Salvage value								21 000 000
Maintenance	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882
Change in working capital	0	0	0	0	0	0	0	0
CF to total capital	424 051	6 537 217	8 994 990	10 649 170	10 649 170	10 649 170	10 649 170	10 649 170
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	21,50
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	399817	5479261	6702177	7053701	6270514	5574286	4955361	847943
Sum of DCF to total capital	38 131 002							

5.3.5. Administrative cost for Tanker Investments Ltd.

Tanker Investments Ltd. has costs not directly connected to the operation of the vessels, hence administrative cost which is not included in the cash flow estimated. Administrative costs the last years have been stable at US\$ 1,8 m, and grow about of 2% per year, accounting for inflation e.g. (See appendix for full complete numbers)

General compay cost

USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 036
Administrative cost	1 800 000	1 836 000	1 872 720	1 910 174	1 948 378	1 987 345	2 027 092	2 728 199
Investment/depreciation	00,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
CF to total capital	1 800 000	1 836 000	1 872 720	1 910 174	1 948 378	1 987 345	2 027 092	2 728 199
Time of discounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	2 728 199
Factor of discounting	0,125	0,125	0,125	0,125	0,125	0,125	0,125	0,125
DCF to total capital	1 697 132	1 538 870	1 395 366	1 265 244	1 147 257	1 040 272	943 264	217 234
Sum of DCF to total capital	16 086 990							

5.4 Result from discounted cash flow calculation of vessels

The discounted cash flow from vessels gives a total value of USD 434 414 699. The discounted cash flow from administrative cost gives a total value of USD 9 244 637.

Part Six: Valuation of Tanker Investments Ltd.

6.1. Discounted cash flow valuation of Tanker Investments Ltd.

The summation of all the discounted cash flow values, gives the value prior to net debt to find the value of the equity of the firm. To get the value of equity, divide the equity by the number of shares to get estimated value per share.

The estimated value per share is USD 15,57 (see table 6.1. for calculation)

Table 6.1: Discounted cash flow valuation of Tanker Investments Ltd.

Vessel	Ownership	DCF Value
Tarbet Spirit	100%	40 799 656
Emerald Spirit	100%	44 082 852
Garibaldi Ŝpirit	100%	44 082 852
Whistler Spirit	100%	44 154 106
Blackcomb Spirit	100%	44 727 407
Peak Spirit	100%	39 372 933
Hovden Spirit	100%	39 893 910
Trysil Spirit	100%	63 456 161
Tianlong Spirit	100%	68 906 398
Jiaolong Spirit	100%	68 906 398
Shenlong Spirit	100%	68 906 398
Dilong Spirit	100%	68 906 398
Hemsedal Spirit	100%	70 992 902
Voss Spirit	100%	70 168 714
Company general cost		16 086 990
Total est. DCF from T1L fleet		777 357 085
Interest bearing debt		205 860 000
Cash		42 948 000
Net value of equity		614 445 085
Number of shares		38 430 172
Est. USD per share		15,57

Source: Christopher

6.2. Net asset valuation

6.2.1. Introduction

The net asset value of Tanker Investments Ltd. is an estimate of the market value of each vessel. The estimates are based on vessel type, vessel size, and vessel age. The current fleet of Tanker Investments Ltd. is seen in the table below:

Table 6.2: Current value of Tanker Investments Ltd.'s fleet

								Current		
	Vessel name	Type	Yard	dwt	Built	Age	Cost	Value	+10%	10Y ave
	Tarbet Spirit	Aframax	Tsuneishi Shipbuilding	107 529	2009	5	36,80	37,00	40,7	51,0
	Emerald Spirit	"	Hudong Shipbuilding	109 000	2009	5	28,50	38,00	41,8	51,0
nax	Garibaldi Spirit	"	"	109 000	2009	5	28,50	38,00	41,8	51,0
Aframax	Whistler Spirit	"	"	109 000	2010	4	29,50	29,00	31,9	51,0
	Blackcomb Spirit	"	"	109 000	2010	4	29,50	29,00	31,9	51,0
	Peak Spirit	"	Sumitomo Shipbuilding	104 000	2011	3	46,10	46,00	50,6	51,0
Coated	Hovden Spirit	Coated Aframax	Hyundai Shipyard	105 276	2012	2	47,50	52,00	57,2	55,0
Coated	Trysil Spirit	"	"	105 276	2012	2	47,50	52,00	57,2	55,0
	Tianlong Spirit	Suezmax	Bohai Shipbuilding	159 000	2009	5	40,80	47,00	51,7	68,0
max	Jiaolong Spirit	"	"	159 000	2009	5	40,80	47,00	51,7	68,0
Suezmax	Shenlong Spirit	"	"	159 000	2009	5	40,80	47,00	51,7	68,0
	Dilong Spirit	"	"	159 000	2009	5	40,80	47,00	51,7	68,0
	Hemsedal Spirit	VLCC	Daewoo Shipbuilding	320 106	2010	4	77,00	80,00	88,0	100,0
VLCC	Voss Spirit	"	"	320 041	2010	4	77,00	80,00	0,88	100,0
					2010	4	611,10	669,00	735,90	888,00
							GAV uplift	9,47%	20,42%	45,31%

Source: Christopher, Pareto Securities

6.2.2. Calculations

The net asset value is estimated by first estimating the current value of the fleet, deduct net interest bearing debt and reminding capex. To get the net asset value per share, divide the net asset value by number of shares.

Value of fleet

The current value of the fleet is estimated to be USD 669 million

Other assets

There are no other assets to value

Gross value

The gross value is USD 669 million

Net interest bearing debt

The net interest bearing debt USD 205 million

Remanding capex

There are no reminding capital expenditures on acquisition of new vessels

Net asset value

The net asset value is calculated by discounting the net interest bearing debt from the gross value, USD 669 million - 205,85 million = USD 463,14 million

Number of shares

Tanker Investments Ltd. has 38 430 000 shares outstanding

NAV per share

The NAV per share is estimated by dividing the net asset value of the firm by number of shares, USD 563,14 million / 38,4 million = USD 12,06

6.2.3 Net asset valuation of Tanker Investments Ltd.

The NAV points to an equity value of USD 463,13 million / USD 12,06 per share given the shipbroker quotes, which is based on the willingness on to buy vessels on the current market.

					Value per
Vessel name	Type		Size (dwt)	Age	unit (USDm)
Tarbet Spirit	Aframx	USDm	107 529	5	37,00
Emerald Spirit	"	"	109 000	5	38,00
Garibaldi Spirit	"	"	109 000	5	38,00
Whistler Spirit	"	"	109 000	4	29,00
Blackcomb Spirit	44	"	109 000	4	29,00
Peak Spirit	"	"	104 000	3	46,00
Hovden Spirit	Coated Aframax	"	105 276	2	52,00
Trysil Spirit	"	"	105 276	2	52,00
Tianlong Spirit	Suezmax	"	159 000	5	47,00
Jiaolong Spirit	"	"	159 000	5	47,00
Shenlong Spirit	"	"	159 000	5	47,00
Dilong Spirit	"	"	159 000	5	47,00
Hemsedal Spirit	VLCC	"	320 106	4	80,00
Voss Spirit	"	"	320 041	4	80,00
Value of fleet					669,00
Value of fleet Market value CPs					-
Other assets, net					-
Gross values					669,00
Net interest bearing debt					205,86
Remaining capex					0,0
Net asset value		USDm			463,14
#of shares (mill)		#			38,4
NAV per share		USD			12,06

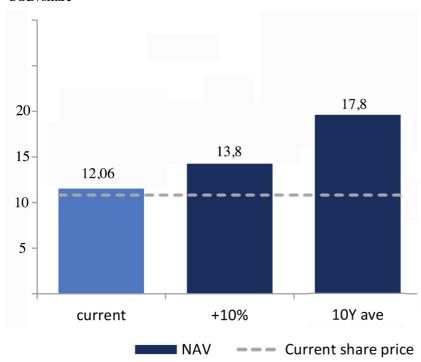
Source: Christopher

6.2.4 Current NAV and sensitivity analysis

The current value of the fleet by historical 10Y average value, the fleet has a value of USD 735,9 million, that is 45,31% higher than the current market value. By increasing the vessel's value by 10%, the fleet has a value of USS 735,9 million. The value of the fleet has increase by 9,67% since the vessels where acquired. There is certain amount of uncertainty with the calculated estimates. The sensitivity analysis is to assess the variations of value of the company as the estimates changes in respect 10Y average and +10% vessel values.

Figure 6.1: Sensitivity analysis

USD/share



Source: Christopher, Pareto Securities

Part Seven: Analysis

7.1 Rationale Choice of Valuation Techniques

The expected cash flow is used as a baseline for company valuation, hence several internal and external drivers influence the valuation. In a highly unpredictable and cyclical industry, the most appropriate valuation methods are subjective to future estimates and operations from beliefs of the analyst. However, the second-hand ship-market gives insights to investors at any point in time the value of the company by pricing it's assets at current market value.

It is important to include to the argument that the current value of any assets might not be accurate for distant future, neither by forecasting of future cash flow. It's obvious that forecasting future cash flow in a highly cyclical industry is gambling, hence I have chosen to value Tanker Investments Ltd. by both the asset based valuation and the enterprise discounted cash flow valuation.

A comparative analysis will be assessed to check the credibility of the different valuation methods up against the current market value of the stock traded at the stock exchange.

7.2. Calculate and Interpret Results

It is important to test the validity of the model from mechanical errors or errors in economic logic. The model should be systematically checked to test the robustness, and key ratios should be consisting with the economics of the industry. Scenario analysis is used to deepen the understanding of the valuation and determine key uncertainties that affect the company's future flow, and use these uncertainties to construct several reasonable forecasts. A comprehensive forecast with weighted equity valuating by the probability of occurring. This will be informative of strategic thinking under alternative situations (Koller, Goedhart, & Wessels, 2010a).

First the valuation results have to be verified to see if the model is technically robust and economically consistent with the industry to see if the results are plausible. Then a sensitivity analysis is performed to verify the value of the company responds to changes key inputs. By creating scenarios multiple forecasts can be created since the future in never truly knowable, and by considering several different paths of how the market reacts by several different assumptions regarding the future of the industry and their impact in general.

7.3. Pre IPO valuation of Tanker Investments Ltd.

Pareto Securities made a Pre-IPO report valuing Tanker Investments Ltd., at the time owing nine tankers. Five Aframax vessels and four Suezmax vessels. The enterprise value estimated to USD 384 million, 25 million shares and net debt of USD 91 million. Tanker Investments Ltd. was valued at that time at NOK 74 per share, with USD/NOK exchange rate at 6,00 (28 February 20114) (Exchangerates.org, 2014). That equals USD 12,33 per share. The estimated pre-money equity value was estimated to be in the interval NOK 74 – 83 per share, while a 10Y average values would mean NOK 110 per share (Pareto, 2014)

7.4. Current value of Tanker Investments Ltd.

Tanker Investments Ltd.'s stock at Oslo Stock Exchange has been quite volatile since the Initial Public Offering in late February 2014. The stock was trading at Oslo Stock Exchange, 25 March 2014 at NOK 78 per share, with USD/NOK exchange rate at 5,98 (31 March 2014) (Exchangerates.org, 2014). Since then, the stock had dropped significant to all time low, currently at NOK 60 (13 October 2014) (Oslo Stock Exchange, 2014).

13/10/14 LISTED INVESTMENTS 76 58.00 60.00 60.00 16:25 66.00 60.00 1.02 2.305.81 72 Week Month This year 58.00 57.00 1,125 60.00 848 Share : Ticke 40 64.50 5,760 65.00 68 66.00 2,490 DNM DNM SWN 60.00 16:25 60.00 1.352 PAS Apr 14 May 14 Jun 14 Jul 14 Aug 14 Sep 14 Oct 14 DNM 64 60.00 1,633 16:25 16:25 60.00 319 SGL UBS 16:25 60.00 377 SGL UBS 16:25 16:25 UBS MSI Intraday 66.00 60.00 67.75 60.00 60.00 60.00 16:25 MSI 4/14 5/14 6/14 7/14 8/14 9/14 10/14 PAS PAS PAS 15:18 61.50 232 SGL 1 year 78.00 60.00 1,500 61.50 14:44 134 14:22 61.50 14:01 62.00 100 PAS 10/14

Figure 7.1: Current quotes of Tanker Investments Ltd. and stock volatility since IPO

Source: Oslo Stock Exchange

7.5. Comparative analysis

7.5.1. DCF valuation compared to current market value

The discounted cash flow analysis estimated a current value on Tanker Investments of USD 15,57 per share, which in current USD/NOK exchange rate at 6,52 (13 October 2014) (Exchangerates.org, 2014). That equals NOK 101,51 per share. The current share price of Tanker Investment Ltd. is traded at Oslo Stock Exchange is at NOK 60, which is very low.

The differences of per share vale is significant when they are compared to each other, and the current tanker market is taking a hit with low charter rates, which drives down the price, however discounting cash flows with estimated charter rated that long ahead in time does not give a good valuation of it's operation due to the volatility and cyclical behavior.

7.5.2. DCF valuation compared to IPO valuation

The discounted cash flow analysis estimated a current value on Tanker Investments of USD 15,57 per share, which in current USD/NOK exchange rate at 6,52 (13 October 2014) (Exchangerates.org, 2014). That equals NOK 101,51 per share. The pre-IPO

share price of Tanker Investment Ltd. was estimated to be USD 12,33 per share. The differences of per share value is USD 3,24, which is closer to each other compared to the current market value of the stocks traded at Oslo Stock Exchange.

7.5.3. NAV valuation compared to current market value

The net asset valuation estimated a current value on Tanker Investments of USD 12,06 per share, which in current USD/NOK, with exchange rate at 6,52 (13 October 2014) (Exchangerates.org, 2014). That equals NOK 78.63 per share, The current share price of Tanker Investment Ltd. is traded at Oslo Stock Exchange is at NOK 60.

7.5.4. NAV valuation compared to IPO valuation

The net asset valuation estimated a current value on Tanker Investments of USD 12,06 per share, which in current USD/NOK, with exchange rate at 6,52 (13 October 2014) (Exchangerates.org, 2014). That equals NOK 78.63 per share, which is very similar to the pre-IPO valuation made by Pareto Securities, hence estimated equity value interval between NOK 74-83 per share.

7.5.5. DCF valuation compared to NAV valuation

The discounted cash flow valuation estimated a value of USD 15,57 per share, and the net asset valuation estimated a value of USD 12,06. The end values are not very far from each other despite the different valuation techniques, the difference is USD 3,54.

7.6. Comparative evaluation

The discounted cash flow valuation is based on unknown charter rates up to 23 years ahead in time in the very complex and cyclic shipping sector, which is even hard to predict for even the next 12 months. The charter rates are subject to large fluctuations to both bust and boom markets, the stated discounted interest rate, the fleet utilization estimates, the operational expenses, the income tax rate, the cost of capital, may all be incorrect and deviate, generating large shifts in both directions. There are many uncertainties of how supply and demand responds to the global market, which makes this valuation not very predicative to be based a valuation upon.

The Net asset valuation is based on current assets Tanker Investments Ltd. owns and operate, the company does not have high leverage, and despite the shipping rates are falling, the winter is coming, and winders generates a higher demand of fossil fuel to Northern Europe. The fleet is almost fully operational and prepared for a long winter. The vessels are liquid and can be sold at the current market if cash is needed. The valuation is simple, but covers the true value of the company at the current market, based on interest of buyers and sellers of vessels

Part Eight: Conclusion

The valuation of Tanker Investments Ltd. indicated the stock is currently undervalued compared to it's assets. The stock traded at Oslo Stock Exchange has experienced large shifts downwards recently, and is currently traded at NOK 60.

The net asset valuation estimated a value of USD 12,06, or NOK 78,63 per share of Tanker Investments Ltd. This is about 20-25% below 10Y value of the vessels, and market sentiments indicates shortage on vessels the upcoming years, which may drive up the charter rates to another boom market.

There are many uncertainties in regards to Tanker Investments Ltd.'s current value, and where the market is headed, hence it's almost a fully fleet operational with an average age of close to 4,5 years. That means the fleet will operate with effective fuel consumption systems compared to older vessels, which also indicates many years still to come before scrapped.

Some of the most influential weaknesses of this valuation are all the uncertainties that are impossible to predict, such as bunker prices, political factors and how the global economics evolves. There are many unknown-unknowns, or also called black swans, however, my recommendation would be to buy Tanker Investments Ltd. stocks, at the moment the market is fleeing from it's shares, and can be acquired by reasonable low values, compared to it's asset value.

At the current market with low charter rates, unproductive vessels with operational cost higher than it's charter rates will be scrapped,

There is also predicted fault of vessels to fill in the gap in the upcoming years, which will drive up the charter rates once more in another cycle of boom. If so, Tanker Investments Ltd. will be well positioned, with all it's vessels fully operational.

The company has low levels of debt, the issued debt is at low interest rates, and it can afford to stop it's operations if charter rates are below operational cost of the vessels if needed before liquidity becomes a problem.

Part Nine: References

Title 26, Subtitle A, Chapter 1, Subchapter N, Part II Subpart B, § 883 (2014).

Bloomberg. (2014). Betas by sector.

Boeing. (2012). World Air Cargo Forecast 2012-2013.

Buyupside. (2014). Stock Return: Selected Shipping Stocks.

Connector, M. (2014). Ships.

Daily Mail. (2014). Europe plunged into energy crisis as Russia cuts off gas supply via Ukraine.

Douglas-Westwood Limited. (2005). Marine Industried Global Market Analysis.

Exchangerates.org. (2014). US Dollar exchange rates.

IHS-Fairplay (Sea-Web). (2014).

International Chamber of Shipping. (2014a). Shipping Facts.

International Chamber of Shipping. (2014b). Shipping Facts.

International Monetary Fund. (2008). Republic of the Marshall Island: Selected Issued and statistical Appendix.

Jordan, B. D., Westerfield, R. W., & Ross, S. A. (2011). Corporate Finance Essentials.

Koller, T., Goedhart, M., & Wessels, D. (2010a). Calculating and Interpreting Results. In M. Company (Ed.), Valuation - Measuring and Managing the Value of Companies.

Koller, T., Goedhart, M., & Wessels, D. (2010b). Frameworks for Valuation. In M. Company (Ed.), *Valuation - Measuring and Managing the Value of Companies*.

Koller, T., Goedhart, M., & Wessels, D. (2010c). Fundamental Principles of Value Creation. In M. Company (Ed.), *Valuation - Measuring and Managing the Value of Companies*.

Koller, T., Goedhart, M., & Wessels, D. (2010d). Growth. In M. Company (Ed.), *Valuation - Measuring and Managing the Value of Companies*.

Koller, T., Goedhart, M., & Wessels, D. (2010e). Valuation - Measuring and Managing the Value of Companies.

Koller, T., Goedhart, M., & Wessels, D. (2010f). Valuing Cyclical Companies. In M. Company (Ed.), Valuation - Measuring and Managing the Value of Companies.

Koller, T., Goedhart, M., & Wessels, D. (2010g). Valuing Flexibility. In M. Company (Ed.), *Valuation - Measuring and Managing the Value of Companies*.

MoneyWeek. (2014). Brent Crude Oil Performance.

Nerlove et al. (1995).

Oslo Stock Exchange. (2014).

Pareto. (2014). Tanker Investments Ltd. .

PWC. (2013). The Norwegian Market Risk Premium 2012 and 2013.

Rederiforening, D. (2014). Update from Danish Shipowners' Association May 2014.

Rochdale Report on shipping industry. (1970).

Schumpeter. (1954).

Scott, R. (2013).

Stopford, M. (2009). Maritime Economics: Routledge.

Tanker Investments Ltd. (2014). News Release [Press release]

Tanker Investments Ltd. (2014). Tanker Investments LTD. Reports Second Quarter 2014 Results.

TIL. (2014). Tanker Investments Ltd. - Prospectus A corporation Incorporated under the Laws of the Republic of The Marshall Islands.

UNCTAD. (2003). Review of Maritime Transport.

UNCTAD. (2006). Review of Martitime Transport.

UNCTAD. (2011a). Review of Maritime Transport.

UNCTAD. (2011b). World seaborn trade by types of cargo and country groups, annual 1970-2011.

Zannetos. (1973).

Part Ten: Appendix

Aframax Tanker carrying around 0.5 million bbl, but usually applied to any tanker of 80,000 –

120,000 dwt.

Ballast Seawater pumped into carefully located ballast tanks, or cargo spaces, when ship is not carrying

cargo, To lower the ship in the water so that the propeller is sufficiently submerged to perform

efficiently.

Berth Designated are of quayside where a ship comes alongside to load and discharge cargo.

Bulk carrier Single-deck ship, which carries dry cargoes such as ore, coal, sugar or cereals. Smaller vessels

may have their own cranes, whilst larger sizes rely on shore base equipment.

Bare boat charter Similar to lease. The vessel is chartered to a third party who to all intents and purposes owns it for

the period of the charterer, provides the crew, pays operating costs (including maintenance) and voyage costs (bunkers, port dues, canal transit dues, etc.), and directs it's operations.

Bunker Fuel oil burned din ships' main engine.

Capesize Bulk carrier to wide to transit the Panama Canal. Usually over 100,00 tonnes deadweight, but

Size increase over time, currently 170,000 – 180,000 dwt.

Charterer Person or company who hires a ship from a shipowner for a period of time (time charter) or who

Reserves the entire cargo space for a single voyage (voyage charter).

Chemical Tanker Ship designed to transport chemicals.

Classification Society Organization, such as Lloyd's register, which sets standards for ship constructions; supervises

Standards during construction; and inspect the hull and machinery of a ship clades with the society at regular intervals, awarding the 'class certificate' required to obtain hull insurance. A ship with a

current certificate is 'in class'.

Container Standard box of length 20 or 40 ft, with 8 ft height 6 in. High cube containers are 9 ft 6 in. high,

And container ships are usually designed to carry some of these.

Container-ship Ship designed to carry container, with well guides in the holds into which the containers are

lowered. Containers carried on deck are lashed and secured.

Compensated gross ton (cgt), A measure of shipbuilding output based on the gross tonnage of the ship multiplied by a cgt

coefficient reflecting it's work content.

Cross Trades Transport of goods between foreign countries, i.e. not the ship's flag state.

Deadweight (dwt)

The weight a ship can carry when loaded to it's marks, including cargo, fuel, fresh water, stores

and crew.

EEA Description of all EU countries and the EFTA countries Norway, Iceland and Lichtenstein.

Freeboard Vertical distance between waterline and top of hull.

Freight rate Amount of money paid to a shipowner or shipping line for the carriage of each unit of cargo

Between named ports.

FAK Freigh alt kinds (FAK), is the standard rage charged per container, regardless of what commodity

it is carrying, e.g. FAK rate of \$1,500 per TEU.

FEU Forty-foot container (2x twenty-foot equivalent unit).

Gas tanker Ship capable of carrying liquid gas at sub-zero temperatures. Cargo is kept cold by pressure,

insulation, and/or refrigeration of 'boil-off gas', which is returned to the cargo tanks.

General Cargo Miscellaneous cargo.

Gross ton (gt)

Internal measurement of the ship's open spaces. Now calculated from a formula set out in the

IMO Tonnage Convention.

Handy bulker Bulk carrier at the smaller end of the range of sized associated with this type of ship, typically up

to 30,000 – 35,000 dwt. Most have their own cargo-handling gear.

IMO International Maritime Organization, The UN agency that is responsible for maritime regulations.

Lay-up This describes a ship that has been taken out of service because freight rates are too low to cover

it's operating and maintenance cost. Not a well-defined condition it just means that the ship has not

moved for, say 3 months.

Lashing Used with twist-locks to stop containers moving in heavy seas. Lashing wired may be secured, for

example, from the top corners of the first tier and bottom corners of the second tier.

LIBOR London Inter-bank Offered Rate, the interest rate at which banks raise funds on the Eurodollar

market.

Lightweight (lwt) Weight of a ship's hull machinery, equipment and spaces. This is the basis on which ships are

Usually sold for scrap, e.g. \$200 per lwt.

Liner Trade Describes ships in regular traffic between ports laid down in a fixed schedule.

LPG Tanker A ship designed to transport liquefied petroleum gasses.

LR (Long Range) Product tankers for transport of refined oil products in the order of 65,000 -100,000 DWT.

Off.hire Time, usually measured in days, during which charter hire payments are suspended because the

vessel is not available to trade, for example because of a breakdown or routine repair time.

Operating cost (OPEX), Expenses involved in the day-.to-day running of the ship and incurred whatever trade the ship is

engaged in. These include crew wages and expenses, victualing, stores, spares, repairs and

maintenance, lubricants, and insurance.

P&I club Mutual society, which provides third party insurance to shipowner members.

Panamax Bulk carrier, which can transit Panama Canal where the lock with of 32.5 m is the limiting

factor. Vessels of 60,000 - 75,000 dwt fall into this category; 'Panamax' is also used to refer to

tankers of 60,000 - 70,000 dwt.

Product Tanker A ship designed to transport refined oil products.

Reefer Insulated cargo ship for carrying refrigerated food, either frozen or chilled.

Ro-Ro Ship A ship where the cargo is driven on board and ashore via ramps by lorries or other special

vehicles. The cargo itself is often vehicles.

Reefer container Insulated container for carrying refrigerated cargo. Some have internal electric refrigeration plant

run from a plug on the ship or shire facility. Other receives cold air from center refrigeration unit

on ship

Salvage & Tug Ship A ship helping other ships in and out of ports and when salvage is required

Seller's commission Fee or commission payable by a seller of a vessel to the broker(s) who has secured her sale.

Service agreement Agreement between container line and shipper to provide freight transport on specified terms.

Shipbroker Individual with current market knowledge who acts as intermediary between buyers and sellers in

return for a percentage commission on the transaction. There are several types of these, for example, chartering brokers deal with cargo; sale and purchase brokers buy and sell ships; new

building brokers place contracts for new ships.

SOLAS Safety of Life as Sea Convention. Important convention setting out the safety regulations which

all-merchant shops must comply.

Special survey Mandatory examination of the ship's hull and machinery carried out every five years, or a rolling

basis, by the classification society with which the vessels is classed

Spot rate Negotiated rate per unit (tonne, cubic meter, etc.) of cargo paid to the shipowner to carry specific

cargo between two ports. Voyage costs are paid by the shipowner.

String (of container ships)

The number of container ships needed to maintain a regular service on a specific route. For

example, a string of four ships is needed to run a transatlantic loop.

Suezmax Tanker able to transit Suez Canal fully loaded; carried about 1 million barrels of oil. Tanker is

120,000 - 200,000 dwt are grouped into this category.

Supply Ship A ship working in the offshore industry for the carriage of stores and equipment, towing and

anchor handling.

Tanker Ship designed for the carriage of liquid bulk with cargo space consisting of several tanks. Tankers

carry a wide variety of products, including crude oil, refined products, liquid gas and wine. Parcel tankers have a separate pump and cargo lining for each tank so that many cargo parcels can be

carried separately in the ship.

TEU Twenty-foot equivalent unit (a 40 ft container is 2 TEU).

Time charter A transportation contract under which the charterer has the use of the vessel for a specific period.

A fixed daily or monthly payment is made for the hire of the vessel, for example \$20,000 per day. Under this arrangement, the owner manages the day-to.-day running of the ships, and pays the operating and capital cost. The charterer pays fuel, port charges, loading/discharging fees and other

cargo-related costs, and direct the ship operations.

Time charter equivalent The spot freight rate (e.g. \$20 per tonne for a 40,000 tonne cargo) converted into a daily hire rate

for the voyage (e.g. \$20,000 per day) by deducting voyage costs from the gross freight and

dividing by the days on the voyage, including necessary ballast time.

Tonne Metric ton, equivalent to 1,000 kilograms or 2,240 lbs.

Twist-lock Devices used to join and lock containers to those above and below them by clamping the adjacent

corner castings together 'cones' fit into apertures in the corner castings and turn to lock them in

place. Used with lashing wires and bars.

Tramp Trade Ships in free trade, carrying either full or part cargoes being offered along the way, between ports

not following a fixed schedule.

VLCC Very large crude carrier, generally carried about 2 million barrels of oil, but all

tankers over 200,000 dwt are grouped into this category.

Voyage costs The cost of fuel, for expenses and canal costs which are specified to the voyage. On voyage

charter where the ports are specified they are generally included in the negotiated spot rate and paid by the shipowner. On a time charter where the ports are not known in advance they are paid

by the charterer.

Worldscale A unified scale by means of which tanker freight is quoted. It's purpose is to enable shipowners

and charterers to easily agree on the freight for a given voyage. Worldscale 100 signifies the average costfor a great number of standard voyages, and the freight for a specific voyage is then

agreed upon as either a higher or a lower figure.

This table is taken from the Maritime Economics book by Martin Stopford

Part Eleven: Acronyms & Abbreviations

ACF Annual Cashflow Analysis

BBL An oil barrel
Bt Billion tons
Btm Billion ton-miles

CAPM Capital Assed Pricing Model

Capex Capital Expenditure

CGT Compensated Gross Tonnage

Crgt Compensated gross registered tonnage

COA Contract of Affreightment
Ctg Compensated gross tonnage
DCF Discounted cash flow
Dwt Deadweight tonnage

EBITA Earnings before interest tax and amortization

EEA European Economic Area

EEC European Economic Community

FCF Free cash flow

FCFF Free cash flow for the firm
FEFC Far East Freight Conference
FFA Forward freight agreement
FPC Forest product carrier

GATT General Agreement of Tariffs and Trade

GDP Gross Domestic Product
GNP Gross national Product
GRI General Rate Increase
Grt gross registered tonnage

Gt gross tonnage
GTL Gas to Liquids

HSE Health, Safety and Environment

IACS International Association of Classification Societies

ILO International Labour Organization

IMCO Inter-governmental Maritime Consultative Organization

IMO International Maritime Organization

IPO Initial Public Offering
IR Investment rate
IRR Internal rate of return

ISL Institute of Shipping Economics and Logistics
ISO International Organization for Standardization
ISPS International Ship and Port Facility Security Code

IT Information Technology

ITF International Transport Workers 'organization

ITS Interest tax shields
LCM lateral cargo mobility
LNG Liquefied Natural Gas
LOA Length overall
Lo-lo Lift on, lift off

LPG Liquefied petroleum gas

MBD Million Barrels per Day

MCR Maximum continuous rating

m.dwt million tons deadweight

M&A Merger & Acquisition

MPP multi-purpose Mt million tons

NAV The Net Asset Value

NOPLAT Net operating profit less adjusted taxes

NPV Net present value
OBO oil/bulk/orge carrier

OECD Organization for Economic Co-operation and Development

OPEC Organization of Petroleum Exporting Countries

P&I protection and indemnity-

PCC Pure car carrier

PCTC pure car and truck carrier
R&D Research & Development
RFR Required freight-rate
ROI Return on Investment
ROIC Return on invested capital

RONIC Long-run forecast for return on new capital

Ro-ro roll-on, roll-off

SDR Special Drawing Right
TCE Time Charter Equivalent
TEU Twenty-foot equivalent unit

Tm Ton mile

ULCC Ultra Large Crude Carrier

UN United Nations

UNCLOS United Nations Conference on the Law Of the Sea
UNCTAD United Nations Conference on Trade and Development

VCF Voyage Cashflow Analysis

VLCC Very Large Crude Carrier ("super tanker")

WACC Weighted average cost of capital

WS Worldscale

WTO World Trade Organization

Geographical Distribution of the World Merchant Fleet, 1 May 2014

	1 July 1980		1 January 2000		1 May 2014	
	GT (1 000)	Per Cent	GT (1000)	Per Cent	GT (1000)	Per Cent
EU-28	136 620	33.0%	126 840	25.0%	199 085	18.53%
Other I-Countries	89 680	21.0%	60 019	12.0%	63 834	5.94%
Open Registers	107 085	26.0%	212 195	41.0%	528 216	49.16%
Eastern Europe	27 565	7.0%	7 974	2.0%	6 051	0.56%
Dyn. Asian Countries	16 858	4.0%	46 792	9.0%	221 504	20.61%
Rest of Asia	25 058	6.0%	46 209	9.0%	33 747	3.14%
Latin America	12 159	3.0%	9 044	2.0%	6 733	0.63%
Africa	4 885	1.0%	3 928	1.0%	12 131	1.13%
Unknown	0	0.0%	2 355	0.0%	3 219	0.30%
Total	419 910	100.0%	515 356	100.0%	1 074 520	100.0%

Source: IHS-Fairplay (Sea-Web)

Table x.x: World Merchant Fleet by Flag State, 1 May 2014

		GT	TDW	GT	
Rank	Flag	(1 000)	(1 000)	per cent	Vessels
1	Panama	214 272	329 031	19.94%	6 591
2	Liberia	123 351	192 892	11.48%	2 924
3	Marshall Islands	93 162	152 603	8.67%	2 151
4	Hong Kong	86 859	141 806	8.08%	2 201
5	Singapore	70 723	108 569	6.58%	2 079
6	Malta	51 294	79 739	4.77%	1 719
7	Bahamas	48 345	62 712	4.50%	1 126
8	Greece	42 184	75 003	3.93%	1 099
9	China	41 335	66 433	3.85%	2 517
10	Cyprus	20 674	32 957	1.92%	818
11	Japan	19 563	28 664	1.82%	3 302
12	Italy	16 874	18 964	1.57%	875
13	Isle of Man	15 175	25 195	1.41%	351
14	United Kingdom	13 739	15 189	1.28%	487
15	Norway	12 962	17 181	1.21%	370
16	Denmark	12 370	14 656	1.15%	420
17	Germany	11 882	13 188	1.11%	364
18	South Korea	10 962	17 770	1.02%	1 262
19	Indonesia	10 807	14 689	1.01%	3 515
20	Bermuda	10 318	9 643	0.96%	139
21	Antigua & Barbuda	9 849	12 697	0.92%	1 134
22	India	8 228	14 135	0.77%	545
23	United States	7 907	9 227	0.74%	462
24	Netherlands	6 839	7 503	0.64%	837
25	Tanzania	6 296	11 802	0.59%	191
	Others	108 550	145 659	10.10%	17 767
	Total World Tonnage	1 074 520	1 617 907	100.00%	55 246

World Fleet by Owner Domicile, 1 May 2014

Rank	Country	BT (1 000)	TDW (1 000)	per cent (GT)	Vessels
1	Japan	153 061	232 425	14.24%	4766
2	Greece	142 703	248 488	13.28%	3 443
3	China	87 966	144 437	8.19%	3 603
4	Germany	86 839	116 273	8.08%	3 434
5	Unites States	46 765	56 479	3.35%	1 322
6	South Korea	43 795	72 545	4.08%	1 433
7	Hong Kong	30 883	48 391	2.87%	950
8	Singapore	30 236	45 918	2.81%	1 276
9	Bermuda	28 641	49 266	2.67%	451
10	Taiwan	28 498	44 242	2.65%	775
11	Denmark	26 363	34 984	2.45%	772
12	Norway	26 007	30 535	2.42%	1 446
13	United Kingdom	24 605	34 316	2.29%	761
14	Canada	17 006	24 164	1.58%	455
15	Italy	16 561	21 834	1.54%	868
16	Switzerland	16 018	18 196	1.49%	367
17	Turkey	14 720	23 790	1.37%	1 328
18	Russia	12 016	18 831	1.12%	1 256
19	India	11 279	19 544	1.05%	473
20	France	9 836	10 468	0.92%	294
21	Iran	9 780	17 528	0.91%	228
22	Indonesia	9 412	12 996	0.88%	1 768
23	Belgium	9 296	15 436	0.87%	179
24	Monaco	9 229	14 877	0.86%	174
25	Netherlands	7 827	10 425	0.73%	828
	Others	175 178	250 521	16.30%	22 596
	World total	1 074 520	1 616 909	100.00%	55 246

World Merchant Fleet by Main Type and Group Owner Domicile, 1 May 2014

	Container		Tank		Dry Bulk		Gen. Cargo, Passenger	
Rank	Country	BT (1 000)	Country	BT (1 000)	Country	BT (1 000)	Country	BT (1 000)
1	Germany	53 744	Greece	62 369	Japan	81 230	Japan	20 908
2	Japan	14 424	Japan	36 389	Greece	65 571	United States	15 040
3	Denmark	11 743	Bermuda	17 563	China	52 057	Norway	11 168
4	Greece	11 743	China	16 625	South Korea	24 813	Germany	8 144
5	China	11 587	Unites States	16 060	Hong Kong	15 446	China	7 697
6	Switzerland	11 479	Norway	11 446	Germany	14 043	Italy	5 558
7	Taiwan	9 782	South Korea	11 033	Taiwan	12 648	Netherlands	4 519
8	Singapore	9 091	Germany	10 942	United States	11 731	Sweden	3 822
9	France	7 480	Singapore	9 838	Bermuda	9 071	South Korea	3 139
10	United Kingdom	5 790	United Kingdom	8 934	Singapore	9 009	Hong Kong	2 971
11	Hong Kong	5 396	Canada	8 691	United Kingdom	7 640	Greece	2 920
12	South Korea	4 810	Russia	8 408	Turkey	7 242	Russia	2 607
13	Canada	4 510	Denmark	8 098	India	5 153	Isle Of Man	2 561
14	United States	3 935	Iran	7 327	Italy	4 933	Indonesia	2 460
15	Israel	2 239	Hong Kong	7 069	Brazil	4 604	Turkey	2 356
16	Kuwait	2 074	Saudi Arabia	6 767	Monaco	3 569	Singapore	2 297
17	Cyprus	1 820	Italy	5 964	Belgium	3 368	United Kingdom	2 242
18	Monaco	1 438	India	5 577	Canada	3 150	Switzerland	2 082
19	Isle on Man	1 215	Qatar	5 228	Norway	2 749	Malaysia	2 034
20	Indonesia	1 128	Belgium	5 219	Denmark	2 448	Finland	1 588
21	Chile	1 062	Malaysia	5 112	Isle Of Man	2 255	Denmark	1 393
22	Iran	976	Taiwan	4 804	Cyprus	1 975	Bermuda	1 334
23	Netherlands	942	Turkey	4 286	Switzerland	1 808	Cyprus	1 271
24	Turkey	836	U.A.E	4 058	Indonesia	1 767	Taiwan	1 264
25	Bermuda	673	Indonesia	4 056	Thailand	1 612	Vietnam	1 195
	Others	8 481	Others	52 868	Others	44 693	Others	31 345
	World total	191 190		344 733		394 685		143 913

World Merchant Fleet by Operator Domicile, 1 May 2014

Rank	Country	GT (1 000)	TDW (1 000)	GT per cent	Vessels
1	Japan	126 925	187 313	11.81	5 849
2	Greece	122 102	216 030	11.36	3 467
3	China	87345	138 184	8.13	4 163
4	Germany	63 844	94 463	5.94	2 662
5	United States	60 480	78 655	5.63	1 697
6	Singapore	59 965	101 133	5.58	2 460
7	Denmark	56 383	80 259	5.25	1 742
8	South Korea	55 569	82 287	5.17	2 172
9	Hong Kong	40 913	65 636	3.81	1 525
10	United Kingdom	37 400	58 037	3.48	1 012
11	Switzerland	36 279	49 562	3.38	686
12	Taiwan	34 853	50 780	3.24	1 053
13	Norway	32 117	40 314	2.99	1 577
14	France	17 996	20 364	1.67	519
15	Italy	16 134	17 578	1.50	892
16	Bermuda	14 395	25 662	1.34	257
17	Turkey	13 793	21 310	1.28	1 745
18	Russia	12 518	18 708	1.16	1 645
19	U.A.E.	11 630	19 158	1.08	679
20	Belgium	11 090	17 328	1.03	332
21	Brazil	11 072	20 480	1.03	188
22	India	10 906	18 565	1.02	651
23	Indonesia	10 795	14 352	1.00	3 536
24	Netherlands	10 602	14 456	0.99	1 127
25	Iran	10 137	18 043	0.94	481
	Others	109276	148249	10.17	13329
	World total	1074520	1616907	100.00	55446

World Merchant Fleet by Main Type and Operator Domicile, 1 May 2014

	Container		Tank		Dry Bulk		Gen. cargo and passenge	r
Rank	Country	GT (1000)	Country	GT (1000)	Country	GT (1000)	Country	GT (1000)
1	Denmark	26 228	Greece	54 510	Japan	65 825	Japan	21 726
2	Switzerland	24 085	Singapore	30 242	Greece	62 177	United States	14 440
3	Germany	22 353	United States	26 721	China	46 781	Norway	11 854
4	China	16 750	Japan	24 669	Germany	28 159	China	8 977
5	Taiwan	16 512	United Kingdom	22 355	South Korea	24 911	Germany	8 051
6	Japan	14 705	Denmark	17 997	Hong Kong	24 377	South Korea	7 959
7	France	13 794	China	14 837	Singapore	20 193	Italy	7 348
8	South Korea	10 956	Norway	13 313	Taiwan	12 401	Netherlands	4 885
9	United States	9 582	South Korea	11 743	Switzerland	10 348	United Kingdom	4 234
10	Singapore	7 110	Bermuda	10 381	Denmark	9 859	Indonesia	3 844
11	Hong Kong	6 389	U.A.E.	9 350	United States	9 736	Hong Kong	3 837
12	Israel	3 110	Qatar	8 347	United Kingdom	9 554	Russia	3 601
13	Kuwait	2 879	Russia	8 026	Brazil	7 187	Turkey	3 426
14	Chile	2 878	Iran	7 332	Norway	6 705	Greece	3 278
15	Greece	2 138	Hong Kong	6 310	Turkey	6 483	Singapore	2 420
16	Netherlands	1 340	India	5 388	Belgium	4 685	Denmark	2 299
17	United Kingdom	1 257	Germany	5 281	India	4 492	Bermuda	1 892
18	Belgium	1 109	Taiwan	4 728	Italy	4 078	Finland	1 762
19	Indonesia	1 059	Italy	4 404	Canada	3 956	Sweden	1 732
20	Iran	977	Indonesia	4 165	Monaco	3 516	Vietnam	1 693
21	Brazil	619	Belgium	3 836	Bermuda	1 986	France	1 476
22	U.A.E.	568	Malaysia	3 502	Indonesia	1 727	Belgium	1 460
23	Turkey	541	Turkey	3 344	Netherlands	1 622	Taiwan	1 212
24	Cyprus	415	Brazil	3 186	Vietnam	1 520	Philippines	1 129
25	India	397	Saudi Arabia	2 823	France	1 470	Spain	1 050
	Others	3 725	Others	2 756	Others	21 683	Others	18 092
	World Total	191 478		343 935		395 430		143 677

		-	-	1 000 GT	-	-	-
Rank	Country	Tank	Bulk	Container	Gen. cargo	Other/Pass	Total
1	Panama	42 976	110 725	33 231	23 629	3 711	214 272
2	Liberia	42 841	37 138	38 930	4 280	162	123 351
3	Marshall Island	43 860	37 320	8 216	3 487	279	93 162
4	Hong Kong	16 794	46 140	19 176	4 005	744	86 859
5	Singapore	24 031	22 507	19 104	5 065	16	70 723
6	Malta	16 469	21 720	7 997	2 752	2 356	51 294
7	Bahamas	25 369	8 464	1 290	6 749	6 473	48 345
8	Greece	25 744	13 574	1 631	196	1 039	42 184
9	China	8 154	23 691	5 373	3 244	873	41 335
10	Cyprus	3 629	11 384	4 115	1 149	397	20 674
11	Japan	6 315	9 127	112	2 939	1 070	19 563
12	Italy	4 969	4 002	766	2 896	4 241	16 874
13	Isle Of Man	7 207	6 017	1 310	623	18	15 175
14	United Kingdom	1 852	1 983	6 902	1 716	1 286	13 739
15	Norway	6 428	2 221	0	3 539	774	12 962
16	Denmark	3 312	204	7 987	395	472	12 370
17	Germany	346	155	10 931	181	269	11 882
18	South Korea	1 628	6 867	783	1 432	252	10 962
19	Indonesia	4 137	1 656	1 163	3 028	823	10 807
20	Bermuda	6 033	1 257	648	0	2380	10 318
21	Antigua & Barbuda	138	849	4 801	4 061	0	9 849
22	India	4 794	2 700	249	404	81	8 228
23	United States	2 021	872	3 040	1 566	408	7 907
24	Netherlands	531	489	832	3 669	1 318	6 839
25	Tanzania (Zanzibar)	5 876	72	11	336	1	6 296
	Others	38 481	24 296	12 880	78 633	6 158	108 550
	World total	343 935	395 430	191 478	108 076	35 601	1 074 520

World's 25 biggest ship owners by owned tonnage, 1 May 2014

Rank	Company (Group)	Country of Control	Vessels	GT	TDW
1	NYK Line	Japan	412	23 849 016	31 900 615
2	Mitsui OSK Lines Ltd	Japan	382	21 833 551	28 274 838
3	cosco	China	490	20 949 307	34 018 390
4	A.P. Møller-Mærsk A/S	Denmark	304	18 551 359	23 490 222
5	China Shipping Group Co	China	377	15 915 556	24 861 808
6	MSC Mediterranean Shipping Co	Switzerland	192	12 562 307	12 944 636
7	Kawasaki Kisen Kaisha Ltd	Japan	210	11 364 041	14 875 734
8	Anangel Shipping Enterprises	Greece	98	10 358 725	19 219 529
9	Shoei Kisen Kaisha Ltd	Japan	162	8 397 775	11 546 576
10	Carnival Corp	United States	100	8 145 132	839 495
11	Teekay Corp	Canada	103	7 628 099	11 563 278
12	NITC	Iran	58	7 126 440	13 550 271
13	SOVCOMFLOT	Russia	132	7 123 694	12 472 789
14	CMA CGM Holding & Co SAS	France	91	6 397 010	6 948 401
15	Hanjin Shipping Holdings Co	South Korea	91	6 263 275	9 766 638
16	Nissen Kaiun Co Ltd	Japan	108	5 580 529	10 170 552
17	Zodiac Maritime Agencies Ltd	United Kingdom	86	5 440 684	7 511 772
18	Neptune Orient Lines Ltd	Singapore	57	5 344 576	5 472 054
19	Sammy Ofer Group Monaco SOGM	Monaco	80	5 310 906	8 591 619
20	Claus-Peter Offen Reederei	Germany	80	5 310 715	6 543 581
21	Peter Doehle Schiffahrts-KG	Germany	120	5 297 886	5 965 615
22	SK Shipping Co Ltd	South Korea	62	5 165 615	9 230 249
23	Evergreen Marine Corp	Taiwan	94	5 111 829	5 271 575
24	Dynacom Tankers Management Ltd	Greece	54	4 839 501	8 988 746
25	ER Schiffahrt GmbH & Cie KG	Germany	80	4 796 555	6 290 708
	Top 25 total		4 023	238 664 083	330 309 691
	Other		51 246	835 855 460	1 286 597 234
	World total		55 246	1 074 519 543	1 616 906 925

World's 25 biggest companies by operated tonnage 1 May 2014

Rank	Company (Group)	Country of Control	Vessels	GT	TDW
1	A.P. Møller-Mærsk A/S	Denmark	835	39 978 385	49 391 313
2	NYK Line	Japan	666	32 750 925	45 670 356
3	China Shipping Group Co	China	474	30 403 685	19 750 381
4	Mitsui OSK Lines Ltd	Japan	673	30 402 844	40 423 829
5	MSC Mediterranean Shipping Co	Switzerland	418	26 113 631	28 151 083
6	Kawasaki Kisen Kaisha Ltd	Japan	431	21 817 987	28 849 065
7	COSCO	China	443	20 754 402	31 449 469
8	Oldendorff Carriers GmbH & Co	Germany	447	16 835 909	30 510 047
9	CMA CGM SA The French Line	France	291	13 471 073	15 184 859
10	Hanjin Shipping Co Ltd	South Korea	187	11 459 394	16 271 603
11	Evergreen Marine Corp	Taiwan	189	10 925 965	10 076 911
12	Huyndai Corp	South Korea	140	8 123 302	11 351 132
13	Hapag-Lloyd AG	Germany	143	8 028 336	8 957 751
14	APL Ltd	Singapore	116	7 436 098	7 937 539
15	NITC	Iran	64	7 129 309	13 554 021
16	Vale SA	Brazil	61	7 107 973	14 038 630
17	Frontline Ltd	Bermuda	63	7 090 061	13 505 302
18	SwissMarine Services SA	Switzerland	98	6 766 291	12 919 300
19	D/S Norden A/S	Denmark	205	6 703 500	11 808 546
20	Orient Overseas Container Line	Hong Kong	95	5 672 479	6 289 999
21	SK Shipping Co Ltd	South Korea	70	5 646 135	10 014 878
22	Tankers UK Agencies Ltd	United Kingdom	34	5 572 576	10 706 230
23	Navig8 Pte Ltd	Singapore	112	5 166 765	9 405 006
24	Hamburg Süd	Germany	102	4 883 442	5 562 017
25	Pan Ocean Co Ltd	South Korea	104	4 728 866	8 398 922
	Top 25 Total		6 461	344 969 333	460 178 189
	Others		48 785	729 550 210	1 156 728 736
	World Total		55 246	1 074 519 543	1 616 906 925

The World's Total New building Orders by Country of Building

		1 May 2011		1 May 2012		1 May 2013		1 May 2014	
Rank	Country of Build	Vessels	TDW (1 000)						
1	China	2 725	184 067	2 215	145 174	1 599	107 924	1 960	139 075
2	South Korea	1 375	145 029	1 039	105 166	749	67 524	858	82 182
3	Japan	1 072	74 909	852	60 049	699	46 165	826	46 146
4	Philippines	108	13 317	77	9 031	53	4 773	95	7 788
5	Brazil	50	3 673	48	3 635	40	2 840	47	3 167
6	Vietnam	223	4 027	200	3 476	146	2 098	123	2 948
7	Romania	40	1 616	35	1 285	31	753	28	2 882
8	Taiwan	43	2 622	37	2 603	24	1 721	35	2 054
9	India	138	3 923	105	2 838	66	1 879	48	1 243
10	Iran	22	837	23	837	26	816	15	747
	Others	534	5 508	368	3 927	367	3 024	387	3 280
	Total	6 330	439 528	4 999	338 021	3 800	239 517	4 422	291 513

Fairplay Solutions

The World's Total New building Orders by Ship Type

	1 May 2011		1 May 2012		1 May 2013		1 May 2014	
Ship type	Vessels	TDW (1 000)						
General cargo	1 006	10 510	802	9 977	534	7 137	601	7 807
Container	616	45 769	628	50 504	513	41 171	525	45 312
Ro-Ro	203	2 860	144	1 525	126	1 430	108	940
Tankers	1 517	123 496	1 116	82 029	1 046	66 556	1 335	86 852
Bulk carriers	2 988	256 894	2 395	193 986	1 581	123 223	1 853	150 602
Total	6 330	439 529	5 085	338 021	3 800	239 517	4 422	291 513

Fairplay Solutions

Charter Rates for Tankers

		О	il Tankers				Pro	duct Tankers		
			VLCC				LR2 (85.0	00 - 110.000	TDW)	
					Sing	le Voyages & 1000/day				
Month	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014
January	62	15	27	17	23,0	23	13	8	14	16,0
February	40	26	23	2	23,8	21	8	5	10	15,3
March	48	29	32	5	25,0	17	9	4	17	16,0
April	53	13	41	3	24,5	13	15	9	19	16,3
May	39	13	37	12	23,5	17	17	9	12	15,0
June	58	18	22	17	27,8	16	11	13	9	15,3
July	25	10	8	21		16	16	19	9	
August	17	7	4	9		23	16	16	13	
September	13	6	8	18		21	16	12	16	
October	11	8	6	18		9	13	23	16	
November	28	19	22	20		12	7	27	16	
December	20	19	23	25		15	9	25	16	
Average	35	15	21	14	23.9	17	13	14	14	15,6

Source: R.S. Platou Shipbrokers a.s.

Charter Rates for Dry Cargo Ships

		(Capezize]	Panamax		
		(100.000	- 199.000 T	DW)			(50.000	- 79.999 TD	W)	
					Single Voyag	ges & 1000/da <u>y</u>				
Month	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014
January	39	10	10	8	20,7	31	15	11	6	14,0
-	32	7	6	8	26,0	26	14	7	6	14,8
February	36	10	6	6	25,0	33	17	8	9	13,5
March	31	8	7	6		32	14	11	9	
April	46	9	8	7		36	14	12	7	
May	37	11	4	11		29	16	8	7	
June	17	12	7	15		19	13	10	9	
July	28	13	6	16		24	13	7	8	
August	34	26	8	22		26	14	5	13	
September	39	29	15	19		20	17	6	13	
October	35	26	19	18		19	15	7	12	
November	24	29	9	19		18	15	7	12	
December										
		16	9 €	hinnia.	and 28/9 luntion	f Tonkar Invact26an	to I +15	8	9	14.1

Source: R.S. Platou Shipbrokers a.s.

Charter Rates for Cellular Container Ships

		4	.500 TEU				1	.700 TEU			
					Single Voyage	es & 1000/da <u>y</u>					
Month	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
January	5	16	8	7	8,0	6	4	9	7	6	7,3
February	6	17	8	7	7,9	6	5	11	7	6	7,3
March	7	17	8	7	7,9	5	5	12	7	7	7,3
April	9	17	8	7	8,0	5	5	12	7	7	7,5
May	11	17	9	7		5	6	12	7	7	
June	13	17	9	8		5	8	12	7	7	
July	13	15	9	8		4	8	12	7	8	
August	14	14	9	8		5	8	11	7	8	
September	14	13	8	8		4	8	11	6	8	
October	14	10	8	7		4	8	9	6	8	
November	14	10	8	7,3		4	8	9	6	7,5	
December	14	9	8	7,1		4	8	8	6	7,5	
Average	11	14	8	7	8,0	5	7	11	7	7	7,4

R.S. Platou Shipbrokers a.s.

Total Cargo Traffic in Major Ports

				-	(1	mill. tons)			Av. ann. growth
Rank	Port	Country	Unit	2008	2009	2010	2011	2012	2008-2013 (%)
Top 10)								
1	Shanghai	China	mt	511,4	505,8	534,4	590,4	644,8	6,0
2	2 Singapore	Singapore	ft*	515,5	472,3	501,6	531,2	538,0	1,1
3	3 Tianjin	China	mt	265,2	381,1	416,9	459,9	477,0	6,9
4	4 Rotterdam	Netherlands	mt	421,1	387,0	429,9	434,6	441,5	1,2
5	5 Guangzhou	China	mt	347,0	364,0	425,6	431,0	438,0	6,0
ϵ	6 Ningbo	China	mt	363,6	371,5	408,2	349,9	407,3	10,0
7	7 Qingdao	China	mt	278,3	274,3	350,1	372,0	364,6	0,1
8	Busan	South Korea	ft*	241,7	226,2	263	281,5	298,7	6,8
9	Port Hedland	Australien	mt	159,4	178,6	199	246,7	288,4	16,0
10	Hong Kong	China	mt	259,4	243,0	267,8	277,4	269,3	0,9
Other Ports	S								
12	2 Houston	United States	mt	212,2	220,0	262,8	261,7	246,9	-0,2
17	Port Kelang	Malaysia	mt	152,3	137,6	168,6	193,7	195,9	6,5
18	3 Antwerpen	Belgium	mt	189,4	157,8	178,2	187,2	184,1	-0,7
22	2 Xiamen	China	mt	97,0	111,0	129,3	140,9	155,1	12,4
28	3 Itaqui	Brazil	mt	105,2	105,0	118,1	128,9	133,5	6,1
31	Yokohama	Japan	ft*	141,8	115,5	129,6	121,3	121,4	-3,8
33	3 Tanjung Pela.	Malaysia	mt	87,9	90,4	97,7	112,7	116,3	7,2
41	Richards Bay	South Africa	mt	84,5	77,6	85,1	86,4	90,2	1,6
Sou#	te:Bl&lenBremen	Germany	mt	74,6	63,1	68,7	80,6	84,0	3,0

Container Traffic in Major Ports

				(mill. tons)				Av. ann. growth
Rank	Port	Country	2008	2009	2010	2011	2012	2008-2013 (%)
Top 10								
1	Shanghai	China	27 981	24 912	29 003	31 739	32 528	5,
2	Singapore	Singapore	29 918	25 866	26 021	29 938	31 649	1,
3	Hong Kong	China	24 494	21 040	23 699	24 384	23 071	0,
4	Shenzhen	China	21 416	18 250	22 341	22 571	22 960	1,
5	Busan	South Korea	13 446	11 940	14 185	16 164	16 996	5,
6	Ningbo	China	11 220	10 320	13 071	14 719	16 783	11,
7	Qingdao	China	10 320	10 250	12 010	13 020	14 609	8,
8	Guangzhou	China	11 000	11 200	12 487	14 260	14 514	11,
9	Dubai Ports	U.A.E.	11 827	11 124	11 576	12 618	13 300	4,
10	Tianjin	China	8 500	8 667	10 076	11 588	12 298	9,
Other Ports								
13	Rotterdam	Netherlands	10 784	9 743	11 146	11 877	11 866	2,
14	Hamburg	Germany	9 737	7 008	7 896	9 014	8 864	-2,
24	New York/NJ	United States	5 265	4 562	5 292	5 503	5 530	1,
25	Tokyo	Japan	3 727	3 383	4 284	4 416	4 345	3,
30	Algeciras	Spain	3 328	3 043	2 810	3 608	4 071	5,
35	Balboa	Panama	2 168	2 012	2 759	3 188	3 296	11,
38	Santos	Brazil	2 675	2 252	2 722	2 986	3 172	4,
40	Bandar Abbas	Iran	2 000	2 206	2 485	2 752	3 731	8,
48	St. Petersborg	Russia	1 983	1 345	1 930	2 365	2 525	6,

Source: ISL Bremen

World Merchant Fleet by Ship Type, 1 May 2014

		-	-	1 000 GT	-	-	-
Rank	Country	Tank	Bulk	Container	Gen. cargo	Other/Pass	Total
1	Panama	42 976	110 725	33 231	23 629	3 711	214 272
2	Liberia	42 841	37 138	38 930	4 280	162	123 351
3	Marshall Island	43 860	37 320	8 216	3 487	279	93 162
4	Hong Kong	16 794	46 140	19 176	4 005	744	86 859
5	Singapore	24 031	22 507	19 104	5 065	16	70 723
6	Malta	16 469	21 720	7 997	2 752	2 356	51 294
7	Bahamas	25 369	8 464	1 290	6 749	6 473	48 345
8	Greece	25 744	13 574	1 631	196	1 039	42 184
9	China	8 154	23 691	5 373	3 244	873	41 335
10	Cyprus	3 629	11 384	4 115	1 149	397	20 674
11	Japan	6 315	9 127	112	2 939	1 070	19 563
12	Italy	4 969	4 002	766	2 896	4 241	16 874
13	Isle Of Man	7 207	6 017	1 310	623	18	15 175
14	United Kingdom	1 852	1 983	6 902	1 716	1 286	13 739
15	Norway	6 428	2 221	0	3 539	774	12 962
	Others	67 297	39 417	43 325	93 705	12 162	204 008
	World total	343 935	395 430	191 478	159 974	35 601	1 074 520

World Merchant Fleet by Flag State, 1 May 2014

		GT	TDW	GT	
Rank	Flag	(1 000)	(1 000)	per cent	Vessels
1	Panama	214 272	329 031	19.94%	6 591
2	Liberia	123 351	192 892	11.48%	2 924
3	Marshall Islands	93 162	152 603	8.67%	2 151
4	Hong Kong	86 859	141 806	8.08%	2 201
5	Singapore	70 723	108 569	6.58%	2 079
6	Malta	51 294	79 739	4.77%	1 719
7	Bahamas	48 345	62 712	4.50%	1 126
8	Greece	42 184	75 003	3.93%	1 099
9	China	41 335	66 433	3.85%	2 517
10	Cyprus	20 674	32 957	1.92%	818
11	Japan	19 563	28 664	1.82%	3 302
12	Italy	16 874	18 964	1.57%	875
13	Isle of Man	15 175	25 195	1.41%	351
14	United Kingdom	13 739	15 189	1.28%	487
15	Norway	12 962	17 181	1.21%	370
	Others	204 008	270 969	19.01%	26 636
	Total World Tonnage	1 074 520	1 617 907	100.00%	55 246

Source: IHS - Fairplay (Sea-Web)

Time Charter Equivalent

Appendix

Tanker Investments Ltd.

Oslo Stock Exchange

Date	Price	Change pct	Date	Price	Change pct
27.03.14	77,75		27.03.14	622,22	
28.03.14	77,25	-0,64%	28.03.14	621,62	-0,10%
31.03.14	77,50	0,32%	31.03.14	622,19	0,09%
01.04.14	77,25	-0,32%	01.04.14	620,02	-0,35%
02.04.14	77,00	-0,32%	02.04.14	619,99	0,00%
03.04.14	76,00	-1,30%	03.04.14	619,41	-0,09%
04.04.14	74,75	-1,64%	04.04.14	622,96	0,57%
07.04.14	72,50	-3,01%	07.04.14	614,00	-1,44%
08.04.14	72,75	0,34%	08.04.14	608,90	-0,83%
09.04.14	71,00	-2,41%	09.04.14	614,79	0,97%
10.04.14	71,75	1,06%	10.04.14	614,74	-0,01%
11.04.14	70,25	-2,09%	11.04.14	603,15	-1,89%
14.04.14	69,75	-0,71%	14.04.14	607,92	0,79%
15.04.14	69,50	-0,36%	15.04.14	609,51	0,26%
16.04.14	69,75	0,36%	16.04.14	614,72	0,85%
22.04.14	70,75	1,43%	22.04.14	624,74	1,63%
23.04.14	70,50	-0,35%	23.04.14	621,34	-0,54%
24.04.14	71,75	1,77%	24.04.14	625,11	0,61%
25.04.14	72,00	0,35%	25.04.14	628,91	0,61%
28.04.14	71,00	-1,39%	28.04.14	629,98	0,17%
29.04.14	70,00	-1,41%	29.04.14	642,04	1,91%
30.04.14	69,75	-0,36%	30.04.14	643,20	0,18%

02.05.14	69,25	-0,72%	02.05.14	648,82	0,87%
05.05.14	70,50	1,81%	05.05.14	647,85	-0,15%
06.05.14	70,00	-0,71%	06.05.14	649,17	0,20%
07.05.14	70,00	0,00%	07.05.14	651,26	0,32%
08.05.14	71,25	1,79%	08.05.14	656,31	0,78%
09.05.14	71,00	-0,35%	09.05.14	656,78	0,07%
12.05.14	69,75	-1,76%	12.05.14	662,53	0,88%
13.05.14	69,50	-0,36%	13.05.14	662,15	-0,06%
14.05.14	69,75	0,36%	14.05.14	664,57	0,37%
15.05.14	67,00	-3,94%	15.05.14	663,91	-0,10%
16.05.14	68,00	1,49%	16.05.14	662,31	-0,24%
19.05.14	66,75	-1,84%	19.05.14	662,93	0,09%
20.05.14	64,75	-3,00%	20.05.14	660,05	-0,43%
21.05.14	63,50	-1,93%	21.05.14	664,13	0,62%
22.05.14	65,00	2,36%	22.05.14	667,45	0,50%
23.05.14	66,00	1,54%	23.05.14	670,15	0,40%
26.05.14	65,75	-0,38%	26.05.14	669,76	-0,06%
27.05.14	65,00	-1,14%	27.05.14	673,49	0,56%
28.05.14	64,50	-0,77%	28.05.14	675,62	0,32%
30.05.14	64,50	0,00%	30.05.14	675,14	-0,07%
02.06.14	63,75	-1,16%	02.06.14	681,13	0,89%
03.06.14	63,00	-1,18%	03.06.14	683,03	0,28%
04.06.14	63,00	0,00%	04.06.14	679,18	-0,56%
05.06.14	62,75	-0,40%	05.06.14	687,93	1,29%
06.06.14	66,00	5,18%	06.06.14	691,41	0,51%
10.06.14	67,50	2,27%	10.06.14	691,30	-0,02%
11.06.14	68,00	0,74%	11.06.14	688,99	-0,33%
12.06.14	68,00	0,00%	12.06.14	693,97	0,72%
13.06.14	65,00	-4,41%	13.06.14	695,48	0,22%
16.06.14	65,00	0,00%	16.06.14	693,22	-0,32%
17.06.14	64,00	-1,54%	17.06.14	685,93	-1,05%
18.06.14	65,50	2,34%	18.06.14	695,74	1,43%
19.06.14	65,50	0,00%	19.06.14	703,88	1,17%
20.06.14	66,00	0,76%	20.06.14	702,74	-0,16%
23.06.14	67,50	2,27%	23.06.14	702,74	0,30%
		*			
24.06.14	69,00	2,22%	24.06.14	701,78	-0,43%
25.06.14	68,00	-1,45%	25.06.14	691,08	-1,52%
26.06.14	69,00	1,47%	26.06.14	688,91	-0,31%
27.06.14	68,00	-1,45%	27.06.14	690,88	0,29%
30.06.14	68,50	0,74%	30.06.14	690,39	-0,07%
01.07.14	67,00	-2,19%	01.07.14	696,04	0,82%
02.07.14	69,00	2,99%	02.07.14	695,88	-0,02%
03.07.14	69,00	0,00%	03.07.14	701,29	0,78%
04.07.14	69,00	0,00%	04.07.14	700,27	-0,15%
07.07.14	68,50	-0,72%	07.07.14	699,78	-0,07%
08.07.14	69,00	0,73%	08.07.14	692,02	-1,11%
09.07.14	70,00	1,45%	09.07.14	692,25	0,03%
10.07.14	68,00	-2,86%	10.07.14	678,75	-1,95%
11.07.14	69,00	1,47%	11.07.14	680,87	0,31%
14.07.14	67,00	-2,90%		688,78	1,16%
			14.07.14		
15.07.14	68,50	2,24%	15.07.14	690,76	0,29%
16.07.14	69,00	0,73%	16.07.14	697,29	0,95%
17.07.14	69,00	0,00%	17.07.14	694,99	-0,33%
18.07.14	68,00	-1,45%	18.07.14	688,91	-0,87%
21.07.14	69,00	1,47%	21.07.14	691,46	0,37%
22.07.14	70,00	1,45%	22.07.14	698,00	0,95%
23.07.14	69,00	-1,43%	23.07.14	699,85	0,27%
24.07.14	70,25	1,81%	24.07.14	699,29	-0,08%
25.07.14	70,25	0,00%	25.07.14	693,27	-0,86%
28.07.14	68,00	3,31%	28.07.14	687,46	-0,84%
29.07.14	68,00	0,00%	29.07.14	690,51	0,44%
30.07.14	68,00	0,00%	30.07.14	686,39	-0,60%
		•		•	•

31.07.14	67,00	-1,47%	31.07.14	682,05	-0,63%
01.08.14	67,00	0,00%	01.08.14	676,00	-0,89%
04.08.14	67,00	0,00%	04.08.14	678,66	0,39%
05.08.14	67,00	0,00%	05.08.14	679,68	0,15%
06.08.14	67,00	0,00%	06.08.14	672,64	-1,04%
07.08.14	65,00	3,08%	07.08.14	663,86	-1,31%
08.08.14	64,50	-0,77%	08.08.14	656,74	-1,07%
11.08.14	67,50	4,65%	11.08.14	670,55	2,10%
12.08.14	66,75	-1,11%	12.08.14	659,48	-1,65%
13.08.14	65,25	-2,25%	13.08.14	661,73	0,34%
14.08.14	68,50	4,98%	14.08.14	664,23	0,38%
15.08.14	69,75	1,82%	15.08.14	667,90	0,55%
18.08.14	70,25	0,72%	18.08.14	668,66	0,11%
19.08.14	70,25	0,00%	19.08.14	670,14	0,22%
20.08.14	69,50	-1,07%	20.08.14	673,94	0,57%
21.08.14	69,75	0,36%	21.08.14	674,52	0,09%
22.08.14	69,75	0,00%	22.08.14	672,78	-0,26%
25.08.14	69,00	-1,08%	25.08.14	676,87	0,61%
26.08.14	70,00	1,45%	26.08.14	682,39	0,82%
27.08.14	70,00	0,00%	27.08.14	683,45	0,16%
28.08.14	68,75	-1,79%	28.08.14	681,56	-0,28%
29.08.14	68,75	0,00%	29.08.14	677,43	-0,61%
01.09.14	69,00	0,36%	01.09.14	682,52	0,75%
02.09.14	68,75	-0,36%	02.09.14	684,95	0,36%
03.09.14	68,75	0,00%	03.09.14	687,04	0,31%
04.09.14	69,00	0,36%	04.09.14	689,54	0,36%
05.09.14	69,00	0,00%	05.09.14	684,91	-0,67%
08.09.14	68,50	-0,72%	08.09.14	683,89	-0,15%
09.09.14	67,00	-2,19%	09.09.14	680,42	-0,51%
10.09.14	68,00	1,49%	10.09.14	679,66	-0,11%
11.09.14	67,25	-1,10%	11.09.14	677,26	-0,35%
12.09.14	64,75	-3,72%	12.09.14	680,70	0,51%
15.09.14	64,75	0,00%	15.09.14	679,50	-0,18%
16.09.14	64,00	-1,16%	16.09.14	680,75	0,18%
17.09.14	64,00	0,00%	17.09.14	684,45	0,54%
18.09.14	64,00	0,00%	18.09.14	686,94	0,36%
19.09.14	65,75	-2,66%	19.09.14	686,59	-0,05%
22.09.14	67,00	1,90%	22.09.14	684,78	-0,26%
23.09.14	65,75	-1,87%	23.09.14	675,76	-1,32%
24.09.14	65,25	-0,76%	24.09.14	676,45	0,10%
25.09.14	62,25	0,00%	25.09.14	671,59	-0,72%
26.09.14	64,50	-3,49%	26.09.14	673,67	0,31%
29.09.14	66,00	2,33%	29.09.14	674,37	0,10%
30.09.14	64,00	-3,03%	30.09.14	676,33	0,29%
01.10.14	66,75	4,30%	01.10.14	669,76	-0,97%
02.10.14	64,25	-3,75%	02.10.14	651,51	-2,72%
03.10.14	64,00	-0,39%	03.10.14	649,78	-0,27%
06.10.14	67,75	5,86%	06.10.14	648,51	-0,20%
07.10.14	63,50	-6,27%	07.10.14	637,66	-1,67%
08.10.14	63,00	-0,79%	08.10.14	634,27	-0,53%
09.10.14	63,25	0,40%	09.10.14	626,22	-1,27%
10.10.14	60,00	-5,14%	10.10.14	615,08	-1,78%
		•		•	•

 Covariance
 0,000044987078

 Variance
 0,000059848154

 Beta value
 0,751686980978

Source: Christopher, Oslo Stock Exchange

Consolidated balance sheet as June 30, 2014 Tanker Investments Ltd.

Current Cash and cash equivalents Pool receivables from affiliates, net Accounts receivable Prepaid expenses and other current assets Total current assets Vessels and equipment At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates Total current liabilities	42,948 4,879 5,747 14,061 67,635
Cash and cash equivalents Pool receivables from affiliates, net Accounts receivable Prepaid expenses and other current assets Total current assets Vessels and equipment At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	4,879 5,747 14,061 67,635
Pool receivables from affiliates, net Accounts receivable Prepaid expenses and other current assets Total current assets Vessels and equipment At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	4,879 5,747 14,061 67,635
Accounts receivable Prepaid expenses and other current assets Total current assets Vessels and equipment At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	5,747 14,061 67,635 568,755
Prepaid expenses and other current assets Total current assets Vessels and equipment At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	14,061 67,635 568,755
Total current assets Vessels and equipment At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	67,635 568,755
Vessels and equipment At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	568,755
At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	
At cost, less accumulated depreciation of \$4.1 m Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	
Non-current pool receivables from affiliated Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	
Other non-current assets Total assets Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	11,103
Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	
Liabilities and stockholders equity Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	3,525
Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	651,018
Current Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	
Accounts payable Accrued liabilities Current portion of long-term debt Due to affiliates	
Accrued liabilities Current portion of long-term debt Due to affiliates	
Current portion of long-term debt Due to affiliates	3,971
Due to affiliates	7,771
	18,177
Total current liabilities	7,177
	37,096
Long term debt	211,72
Total liabilities	248,816
Stockholders' equity	
Common stock (38.4 m outstanding)	38
Preferred stock (2 shares outstanding)	1
Additional paid in capital	408,092
Deficit	
Total stockholders' equity	-5,929

Source: Tanker Investments Ltd.

Total liabilities and stockholders' equity

651,018



\$1,500 \$	096 560	5107 +107 595 656 9 096 6	5 2016	5 7300 000	7 300 000	2019	2020	7 300 000	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
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2015 2016 2017 2018 2019 2020 2021 3709.59 3475.682 3.256.318 3051174 28887/8 2.08346 2305/1 2305/1 1044.022 1812.001 1697.807 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6,73	, 6	9	6,73%	6,73%						6,73%	6,73%	,	- 1	~ ;	6,73%	6,73%	6,73%	6,73%	6,73%	,
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559 583 7101 875 870 000 887 000 <		1 430 000						_		_											430 000
165 287 213 056 176 100 <t< td=""><td>560</td><td>5 509 563</td><td></td><td></td><td></td><td>5</td><td></td><td>5</td><td></td><td></td><td></td><td>5</td><td></td><td></td><td>5</td><td></td><td></td><td></td><td></td><td></td><td>870 000</td></t<>	560	5 509 563				5		5				5			5						870 000
5.44 276 6.888 819 5.633 900 5.693 900 <th< td=""><td>078</td><td>165 287</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>176 100</td></th<>	078	165 287																			176 100
8 1164136 11	28 28 28 28	5 344 276						ς -					ς -								693 90C 430 00C
1164136 1164136 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>000 000</td></t<>																					000 000
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	136	1 164 136																			164 136
5.774 649 6215 756 4813 628 4510 099 4225 708 3 959 251 3 709 595 3 475 682 3 256 518 3 051 174 2 858 778 6 785 6	0 8	0 8 674 840																			0.01 970
6.73% 6.73%	5.05	1.50												>							20 50
5 146 649 6 215 756 4 813 628 4 510 099 4 225 708 3 959 251 3 709 595 3 475 682 3 256 518 3 051 174 2 858 778 2 678 514 2 509 617 2 351 370 2 203 101 2 064 182 1 934 022 1 812 070 1 697 807	3%	6,73%	6,73%	6,73%				6,73%					6,73%				6,73%				6,73%
	848	5 146 649											C								590 750

Remaiding life: 21 years USDm	peration tion tion tion tion tion tion tion	Vessel name: Blackcomb Spirit Vessel type: Aframax Remaiding life: 21 years USDm		in operation ciation	Tax	NOPLAT Depreciation	0	Maintenance Change in working capital		Time of disounting	- 1	al capital Spirit uSDm USDm capital
2 014		t 2 014	. l_	82,60% 1 400 000	44 978	1 454 282		1 164 136		0,50	0,73% 1 494 758	1 6 04 40 - 4
	6 6 793 % 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	2 015	6 939 563	84,50% 1 400 000 5 530 562		5 373 376 1 400 000		1 164 136 0	5 705 749	1,50	6,73% 5 174 673	2015 6 939 563 8 84.50% 2 100 000 2 148 89 563 6 145 187 4 694 376 6 2 100 000 2 2 100 000 2 1 1164 187 6 4 894 749 6 6 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
2 016	8 5318/5 8 6348/5 8 6242 013 7	2 016	8 531 875	85,00% 1 400 000 7 121 875	213 956	6 917 919		1 164 136 0	7 345 831	2,50	6 242 013	2 016 531 875 531 875 85.00% 1100 000 1100 000 1100 000 1101 130 0 0 0 0 1250
2 017	7 300 000 8 500 000 5 900 000 1 400 000 1 400 000 1 1 164 136 0 0 0 77 000 3,50 6,73% 4 838 229	2 017	7 300 000	80,00% 1 400 000	177 000	5 723 000 1 400 000		1 164 136 0	000 LL0 9	3,50	6,73% 4 838 229	2017 7300 000 7 80.00% 2 100 000 2 5 500 000 5 156 000 5 100 000 5 1 1164 136 1 1 164 136 1 6 336 000
2 018	7 500 000 80,00% 5 900 000 177 000 5 723 000 1 400 000 1 1 164 136 6 077 000 4,50 6,73% 6,73%	2 018	7 300 000	80,00% 1 400 000	177 000	5 723 000 1 400 000		1 164 136	6 077 000	4,50	0,75% 4 533 148	2 018 8000% 8000% 2 100 000 2 5 20 000 5 160 000 2 160 0
2 019	7 300 000 80,00% 8 90,00% 5 900 000 177 000 5 723 000 1 164 136 0 6 077 000 5,50 6,73% 4 247 305	2 019	7 3(80,00% 1 400 000		5 723 000 1 400 000		1 164 136 0	6 077		6,73% 4 247 305	2 019 7 300 000 7 8 2 100 000 2 2 100 000 2 5 50 000 5 1 104 136 1 1 164 136 1 5 50 5 5 5 5 5 5 5
2 020	7 300 000 80,00% 1 400 000 177 000 5 723 000 1 164 136 0 6 077 000 6,73% 3 979 485		7 30	80,00%		5 723 000 1 400 000) 1164136) 0	6 077	_	6,73% 3 979 485	2 020 7 300 000 7 8 300 000 7 2 100 000 2 5 100 000 5 5 044 000 5 2 100 000 5
2 021	7 300 000 7 300 000 5 900 000 5 723 000 1 400 000 1 106 136 0 6 077 000 6 750 6 750 6 750 7 50	ų	7		0	0 5 723 000 0 1 400 000		45	6 077	,	6 0,73% 5 3 728 554	2 021 80.00% 80.00% 2 100 000 2 5 520 000 5 156 000 5 100 000 5 1 1 164 136 1 1 164 136 1 5 356 000 5 356 000
1	7 300 000 7 300 000 5 900 000 5 723 000 1 400 000 1 400 000 1 164 136 0 6 077 000 8 3 493 445	21 2 022	7 30	% 80,00% 00 1 400 000 00 5 000 000	0	00 5723 000		136 1 164 136 0 0	6 077	`	% 6,73% 54 3 493 445	2 022 500 000 60
	7 300 000 7 300 000 7 300 000 7 400 000 7 5 900 000 7 1400 000 7 1400 000 7 1400 000 7 1400 000 7 161 161 161 8 173 161		7 30	80,00% 00 1400 000 6 5 000 000		00 5723000 $00 1400000$		36 1164136 0 0	6 077		% 6,73% 45 3 273 161	2 023 80,00% 80,00% 2 100 000 2 5 500 000 5 156 000 5 100 000 5 1 1 164 136 1 1 164 136 1 5 356 000 5 356 000
	7 300 000 0 7 300 000 0 5 900 000 0 177 000 0 177 000 0 1400 000 0 1 400 000 0 6 077 000 0 6 077 000 0 6 077 000 0 6 077 000 1 3 066 768		7 30	0% 80,00% 000 1 400 000	0	000 5 723 000		136 1 164 136 0 0	6 07		5% 6,75% 161 3 066 768	2 024 8 000% 8 2 100 000 7 5 2 100 000 2 1 100 000 5 1 1 164 136 1 1 164 136 1 5 356 000 5 5 356 000 6 5 356 000 6 5 356 000 7
_	00 / 300 000 00 1 400 000 00 5 900 000 00 177 000 00 177 000 00 1400 000 01 1400 000 01 00 00 00 150 00 0 077 000 00 0 000 00 000	2 024 2	7			000 5723000 $000 1400000$		136 1 164 136 0 0	0.9		2 8	2 025 0000 0000 0000 0000 0000 0000 0000
	20 7 300 000 20 7 300 000 20 1 400 000 20 5 900 000 20 177 000 20 177 000 20 1 400 000 20 1 400 000 20 1 400 000 20 0 0 0 0 20 0 077 00	2 025 2	7 30			000 5 723 000 000 1 400 000		136 1 164 136 0 0	6 07		26	2 026 7 300 000 7 300 000 5 2 100 000 5 5 200 000 2 100 000 2 100 000 2 100 000 2 100 000 2 1250 2 1350 2 1350 2 1350 2 1350
2	2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		_		0	·ς –			0.9		2.5	2 027 7 300 000 7 300 000 5 2 100 000 5 5 200 000 5 5 40 000 2 100 000 2 100 000 2 100 000 2 1350 00 6 335 000 6 335 000
7 2	2 3 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 027	_	80,00% 80 1 400 000 1 40		5 723 000 5 72 1 400 000 1 40		1 164 136 - 1 16 0	607		6,73% 522 443 236	2 028 7 300 000 7 300 000 5 2 100 000 5 2 100 000 5 2 100 000 1 1 164 136 6 336 000 1 1 56 136
7	221 221	2 028	_	80,00% 8 1 400 000 1 4		5723000 57 1400000 14		1 164 136 1 1 0			0,73% 2363387 22	2 029 7 300 000 8 2 100 000 5 2 100 000 5 5 044 000 2 100 000 1 1 164 136 6 5356 000 6 5356 000
7	7 30 80 1 140 5 90 5 90 1 17 1 16 6 07	2 029	_	80,00% 1 400 000 1 4	ا ن	5 723 000 - 5 7 1 400 000 - 1 4		1 164 136 1		15,50	6,/3% 2 214 361 2 (2 030 7 300 000 7 300 000 5 2 100 000 5 200 000 5 2 100 000 5 2 100 000 5 2 100 000 5 356 000 6 356 000
7	86 / 86 / 86 / 86 / 86 / 86 / 86 / 86 /	2 030	300 000 7	80,00% 1 400 000 1		5 723 000 5 1 400 000 1		1 164 136 1 0		16,50	6,73% 2 074 731 1	2 031 7 300 000 7 300 000 5 2 100 000 5 200 000 5 2 100 000 5 2 100 000 5 2 100 000 5 2 100 000 5 3 3 5 0 00 6 3 3 5 0 00
1	8,000 8,000 1,400,000 1,700 1,700 1,700 1,164 1,36 1,36 1,36 1,36 1,36 1,36 1,36 1,36	2 031	300 000	80,00% 1 400 000		5 723 000 5 1 400 000		1 164 136 0		17,50	- 1	2 032 7 300 000 7 300 000 8 20 000 5 20 000 6 2 100 000 7 355 000 6 2 155 000
	80,000 80,000 1400,000 1400,000 177,000 177,000 1164,136	2 032	2 037	80,00% 1 400 000 5 000 000	177 000	5 723 000 1 400 000		1 164 136 0	000 //0 9	18,50	6,73% 1 821 331	2.033 7.300 000 8.00.09 5.200 000 5.200 000 5.200 000 5.200 000 5.200 000 5.350 000 5.355 000 6.155 6.
- 1	80,00% 80,00% 1400 000 1- 177 000 5- 177 000 5- 1400 000 1- 1164 136 1 0 6 077 000 6- 19,50 6,73% 1,706 484 1-:	2 033	7 300 000	80,00% 1 400 000 5 000 000	177 000	5 723 000 1 400 000		1 164 136 0	000 LL0 9	19,50	6,73% 1 706 484	2 034 7 300 000 80.00% 5 20 0 000 5 20 0 000 5 20 0 000 5 20 0 000 5 355 0 000
_ [80,00% 80,00% 1,400,000 1,700,000 1,700,000 1,400,000 1,600,000 1,	2 034	7 300 000	80,00% 1 400 000	177 000	5 723 000 1 400 000		1 164 136 0	000 //009	20,50	6,73% 1 598 880	2 035 7 300 000 80.00% 5 20 000 5 20 000 5 20 000 5 20 000 5 21 00 000 5 355 000 5 355 000 5 21 50
2 035	7 300 000 80,00% 5 900 000 177 000 5 723 000 1164 136 6 077 000 21,50 6,73% 1 498 060	2 035	7 300 000	80,00% 1 400 000 5 000 000	177 000	5 723 000 1 400 000	8 000 000	1 164 136	0.9		6,7 <i>3%</i> 1 498 060	2 036 80,000 80,000 15,000 15,000 15,000 16,

Vessel type: Coated Aframax Remaiding life: 23 years																								
USDm	2 014	2 015	2 016	2 017	2 018	2 019	2014 2015 2016 2017 2018 2019 2020 2021	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2030		2 032	2 033	2 034	2 035	2036	2 03
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	7 300 000	2 899 260 6 939 563 8 531 875 7 300 000 7 300 000 7 300 000 7 300 000 7 300 000	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000 7	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000	7 300 000	2 300 000	2 300 000 7	2 300 000	300 000	7 300 00
Time in operation	82.60%	84.50%	85.00%	80.00%	%00.08	80.00%	80.008	80.00%	80.00%	%00.08	80.00%	%00.08	80.00%	80.00%	%00.08	80.00%	80.08		80.008	%00.08	80.00%	%00.08	80.00%	80,00%
Depreciation	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	0.70000 2070000 2070000 2070000 2070000 2070000 2070000 2070000 2070000	2 070 000	2 070 000		2 070 000		2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 00
EBÎT	829 260	829 260 4 869 563 6 461 875 5 230 000 5 230 000	6 461 875	5 230 000	5 230 000	5 230 000	5 230 000 5 230 000 5 230 000 5 230 000	5 230 000	5 230 000	u,	5 230 000	5 230 000	5 230 000	5 230 000	5 230 000	5 230 000	5 230 000	5 230 000		5 230 000	5 230 000	5 230 000	5 230 000	5 230 00
Tax	24 878	146 087	193 856	156 900	156 900	156 900	156 900	156 900	156 900		156 900		156 900	156 900	156 900	156 900		156 900	156 900		156 900		156 900	156 90
NOPLAT	804 382	4 723 476	6 2 6 8 0 1 9	5 073 100	5 073 100	5 073 100	5 073 100	5 073 100	5 073 100		5 073 100		5 073 100	5	5 073 100	5 073 100	5 073 100		5 073 100		5 073 100	5 073 100	073 100	5 073 10
Depreciation	2 070 000	2 070 000	2 070 000 2 070 000	2 070 000	2 070 000	2 070 000	2 070 000 2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000 2	000 020	2 070 000 2	2 070 000	2 070 000	2 070 000	2 070 000 3	2 070 000	2 070 000
Salvage value																								8 000 00
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1164136 1164136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	164 136	1 164 136
Change in working capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	_
CF to total capital	854 138	5 015 649	6 655 731	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	5 386 900	2 386 900	2 386 900	5 386 900	386 900	5 386 900
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	7,50	8,50	9,50	10,50	11,50	12,50	13,50	14,50	15,50	16,50	17,50	18,50	19,50	20,50	21,50	22,50	23,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6.73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	
DCF to total capital	826 770	4 548 806	5 655 611	4 288 803	4 018 367	3 764 984	3 527 578	3 305 142	3 096 732	2 901 463	2 718 508	2 547 089	2 386 479	2 235 996	2 095 002	1 962 899	1 839 126	1 723 158	1 614 502	1 512 697	1 417 312	1 327 942	244 206	1 165 751

vessel type: Coated Aframax	×																							
Remaiding life: 23 years																								
USDm		2 015	2 016	2 017	2 018	2014 2015 2016 2017 2018 2019 2020 2021	2020	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2030	2 031	2 032	2 033	2 034	2 035	2 036	2 037
EBITDA	2 899 260	6 939 563	8 531 875	7 300 000	7 300 000	2 899 260 6 939 563 8 531 875 7 300 000 7 300 000 7 300 000 7 300 000 7 300 000	7 300 000 3	7 300 000 7	7 300 000 7	7 300 000 7	7 300 000	7 300 000	7 300 000 7	300 000	Ĺ	300 000 7 300 000		7 300 000 7	300 000	300 000 7	300 000 7	300 000 7	7 300 000 7	300 000
Time in operation	82,60%	84,50%	85,00%	%00,08	%00.08	%00,08	%00,08	%00.08	%00.08	%00.08	%00,08	%00,08		%00,08	%00.08	%00.08	%00,08		%00,08			%00.08	%00'08	%00'08
Depreciation	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000 2	2 070 000 2	70 000 2		2 070 000				2 070 000	6.4		CA	٠.		64	(1	CI	000 020
EBÎT	829 260	4 869 563	6 461 875	5 230 000	5 230 000	829 260 4 869 563 6 461 875 5 230 000 5 230 000 5 230 000 5 230 000 5 230 000	5 230 000 5	5 230 000 5	30 000 5	5 230 000 5	5 230 000		5 230 000 5	5 230 000 5	5 230 000	Ψ,	5 230 000 5			5 230 000 5	230 000 5	230 000 5	5 230 000 5	230 000
Tax	24 878	146 087	193 856	156 900	156 900	156 900	156 900	156 900			156 900	156 900	156 900	156 900			156 900		156 900		156 900	156 900		156 900
NOPLAT	804 382		1723 476 6 268 019	5 073 100	5 073 100	5 073 100	5 073 100 5	5 073 100 5		5 073 100 5	5 073 100	5 073 100 5	5 073 100 3	٠,	5	'n	073 100 5	5 073 100 5		٠,	5 073 100 5	073 100 5	٠,	5 073 100
Depreciation	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000	2 070 000 2	2 070 000 2	2 070 000 2	2 070 000 2	2 070 000	2 070 000 2	2 070 000 2	2 070 000 2	2 070 000 2	070 000 2	2 070 000 2	C	070 000 2	070 000 2	070 000 2	070 000 2	070 000 2	000 020
Salvage value																							∞	000 000
Maintenance	1 164 136	1 164 136	1 164 136	1 164 136	1 164 136	1164136 1164136 1164136 1164136 1164136 1164136 1164136 1164136 1164136 1164136 1164136 1164136	1 164 136	164 136 1	164 136	1 164 136	1 164 136	1164136 1164136	1 164 136	1 164 136	1164136 1164136	164 136 1	1 164 136 1	1164136 1164136		1 164 136 1	1 164 136	1 164 136 1	1 164 136 1	1 164 136
Change in working capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0
CF to total capital	854 138	5 015 649	6 655 731	5 386 900	5 386 900	5 386 900	5 386 900 5	386 900 5	386 900 5	386 900	5 386 900	5 386 900	5 386 900 ±	386 900	5 386 900 5	386 900 5	386 900 5	386 900 5	386 900 5	386 900 5	386 900 5			5 386 900
Time of disounting	0,50	1,50	2,50	3,50	4,50	0,50 1,50 2,50 3,50 4,50 5,50 6,50 7,50 8,50 9,50 10,50	6,50	7,50	8,50	9,50	10,50	11,50	11,50 12,50	13,50	14,50 15,50 16,50	15,50	16,50	17,50 18,50 19,50	18,50	19,50	20,50	21,50	22,50	23,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%		6,73%	6,73%
DCF to total capital	826 770	4 548 806	5 655 611	4 288 803	4 018 367	826 770 4 548 806 5 655 611 4 288 803 4 018 367 3 764 984 3 527 578 3 305 142 3 0	3 527 578	305 142 3	96 732	2 901 463 2	2 718 508	2 547 089	2 386 479 2	2 235 996 2	2 095 002 1	962 899	839 126 1	723 158 1	614 502 1	512 697 1	417 312	327 942	244 206 1	165 751
Sum of DCF to total capital 63 829 750	63 829 750																							

Vessel name: Tianlong Spirit Vessel type: Suezmax Remaiding life: 20 years																						
USDm	2 014	2 015	2 016	2 017	2 018	2 019	2 020	2 021	2 0 2 2	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2030	2 031	2 032	2 033	2 034	2 035
EBITDA	3 270 960	8 481 688 10 858 750 11 972 000 11 972 000 11 972 000 11 972 000 11 972 000	10 858 750	11 972 000	11 972 000	11 972 000	1 972 000 1		11 972 000 1	11 972 000	11 972 000	11 972 000 1	11 972 000 1	1 972 000 1	1 972 000	1 972 000	11 972 000	11 972 000	1 972 000	11 972 000	1 972 000	11 972 000
Time in operation	82,60%	84,50%	85,00%	%00'08	%00.08	%00.08	%00.08	%00.08	%00.08	%00.08	%00.08	%00.08	%00.08	%00'08	%00'08	%00'08	%00'08	%00'08	%00'08	%00.08	%00.08	80,00%
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000
EBÎT	1 230 960	6 441 688	8 818 750	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000
Tax	36 929	193 251	264 563	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960
NOPLAT	1 194 031	6 248 437	8 554 188	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000
Salvage value																						11 000 000
Maintenance	1 457 623	1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	3 1457623 1457623 1	1 457 623	1 457 623	1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623
Change in working capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CF to total capital	1 267 889	6 634 938	9 083 313	10 229 960 1	10 229 960 1	10 229 960 1	0 229 960 1	0 229 960 1	0 229 960	10 229 960	10 229 960 10 229 960	10 229 960	10 229 960 1		10 229 960	10 229 960	10 229 960	10 229 960	10 229 960	10 229 960	10 229 960	10 229 960
Time of disounting	0,50	0,50 1,50 2,50 3,50 4,50 5,50 6,50 7,50 8,50	2,50	3,50	4,50	5,50	6,50	7,50	8,50		10,50	11,50		13,50				17,50		19,50	20,50	21,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%		6,73%	6,73%	6,73%	6,73%	6,73%
DCF to total capital	1 227 264	6 017 375	7 718 412	7 718 412 8 144 626 7 631 056	7 631 056	7 149 870 6 699 025		6 276 610	5 880 830	5 510 006	5 162 566	4 837 033	4 532 028	4 246 255	3 978 502	3 727 632	3 492 581	3 272 352	3 066 010	2 872 678	2 691 538	2 521 819
Sum of DCF to total capital 109 550 207	109 550 207																					

3 270 960 8 481 688 10 858 750 11 8 2,607 8 44 509 85 909 2 040 000 5 040 000 1 230 960 6 441 688 8 18 750 5 3 6 29 193 251 264 563 1 194 031 6 244 437 8 554 188 2 2 040 000 2 040 000 2 040 000	972 000 11 972 000 80,00% 80,00% 2 040 000 2 040 000 9 32 000 9 932 000 297 960 297 960	Ξ	2 020	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032	2 033	2 034	2 035
ation 82.6% 84.50% 85.00% 85.00% 2040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000 2.040.000	2 6		11 972 000 1	11 972 000 11	F	972 000 11	972 000 11	972 000 11	972 000 11	Г	1 972 000 11	Ε	Ξ	Г	11 972 000 11	Г		######
2 040 000 2 040 000 2 040 000 2 040 000 2 1230 900 6441 688 8818750 9 36 929 193 251 264 563 1194 031 6 2448 437 8 541 188 2 040 000 2 040 000 2 040 000 2	2 6	%00.08	%00.08	80,00%	%00.08	%00.08	80,00%	%00.08	%00.08	%00.08	%00.08	%00.08	%00.08	80,00%	%00.08	%00.08	%00'08	%00.08
1230 960 6441 688 8818 750 5 36 59 19373 264 563 11940 31 6248 437 87541 88 2 040 000 2 040 000 2 040 000	6	0 2 040 000	2 040 000	2 040 000 2	2 040 000 2	040 000 2	2 040 000 2	2 040 000 2	2 040 000 2	2 040 000 2	040 000 2	2 040 000 2 0	2 040 000 2 0	2 040 000 2	040 000	040 000 2	040 000 2	040 000
193 251 264 563 6 248 437 8 554 188 9 2 040 000 2 040 000 2		0 9 932 000	9 932 000	9 932 000 9	6	932 000 9	932 000 6	9 932 000 9	5	932 000 9	932 000 9	932 000 9	932 000 9 9	9 932 000 9	932 000	932 000 9	932 000 9	932 000
1194 031 6 248 437 8 554 188 9 2 040 000 2 040 000 2 040 000 2		0 297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960		297 960
2 040 000 2 040 000 2 040 000 2	634 040 9 634 040	0 9 634 040	9 634 040	9 634 040 9	9 634 040 9	634040 9	634 040 9	9 634 040 9	9 634 040 9	634 040 9	634 040 9	634 040 9 6	634 040 9 6	634 040 9	634 040	634 040 9	634 040 9	634 040
	2 040 000 2 040 000	0 2 040 000	2 040 000	2 040 000 2	2 040 000 2	040 000 2	2 040 000 2	2 040 000 2	2 040 000 2	2 040 000 2	040 000 2	040 000 2 (040 000 2 (040 000 2	040 000	040 000 2	040 000 2	040 000
Salvage value																	774	#####
Adintenance 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623	7 623 1 457 623	3 1 457 623	1 457 623		1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623	457 623 1	457 623	1 457 623 1	457 623	457 623 1	457 623 1	457 623 1.	157 623 1.	157 623 1	457 623	457 623	457 623 1	1 457 623
Thange in working capital 0 0 0	0 0	0 0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
CF to total capital 1 267 889 6 634 938 9 083 313 10 229 960 10 229 960 10 229 960 10 229 960 10 229 960 10 229 960	3 960 10 229 960	0 10 229 960	10 229 960 1	_	10 229 960 10	10 229 960 10 229 960	1 229 960 10	10 229 960 10 229 960		10 229 960 10	10 229 960 10	10 229 960 10	10 229 960 10 229 960	229 960 10	10 229 960 10 229 960		10 229 960	######
Time of disounting 0,50 1,50 2,50	3,50 4,50	0 5,50	6,50	7,50	8,50	9,50	10,50	11,50	12,50		14,50	15,50		17,50	18,50	19,50	20,50	21,50
Factor of discounting 6,73% 6,73% 6,73% 6,7	6,73% 6,73%	6 6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%
OCF to total capital 1227 264 6017 375 7718 412 8 144 626 7 631 056 7 149 870 6699 025	4 626 7 631 05¢	5 7 149 870	6 699 025	6 276 610 5	5 880 830 5 510 006		5 162 566 4	4 837 033 4	4 532 028 4	4 246 255 3	3 978 502 3	3 727 632 34	3 492 581 3.	3 272 352 3	3 066 010	2 872 678 2	2 691 538 2 521 819	521 819

Vessel name: Shenlong Spirit Vessel type: Suezmax																						
Remaiding life: 20 years																						
USDm	2 014	2014 2015 2016 2017 2018 2019 2020	2 016	2 017	2 018	2 019	2020	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2030	2 031	2 032	2 033	2 034	2 035
EBITDA	3 270 960	1270960 + 8481688 + 10858750 + 11972000 + 11972000 + 11972000 + 11972000 + 11972000 + 11972000 + 11972000	0 858 750	11 972 000	11 972 000	11 972 000	11 972 000	11 972 000	11 972 000	11 972 000 11 972 000		11 972 000 1	11 972 000 11 972 000 11 972 000	1 972 000 1	1 972 000	11 972 000	11 972 000 1	11 972 000 11 972 000	1 972 000 1	1 972 000 1	972 000	#####
Time in operation	82,60%	84,50%	82,00%	%00,08	%00.08	%00*08	%00'08	%00,08	%00,08	%00,08	%00'08	%00'08	%00*08	%00'08	%00,08	%00,08	%00'08	%00,08	%00*08	%00.08	%00,08	%00'08
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	040 000 2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	61	040 000
EBIT	1 230 960	6 441 688	8 818 750	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	-	932 000
Tax	36 929	193 251	264 563	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960
NOPLAT	1 194 031	6 248 437	8 554 188	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	0,	634 040
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000 2	040 000
Salvage value																						#####
Maintenance	1 457 623	1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623	1 457 623	1 457 623	1 457 623		1 457 623
Change in working capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CF to total capital	1 267 889	6 634 938	9 083 313	10 229 960	10 229 960	10 229 960	10 229 960	10 229 960	10 229 960	. 096 622 01	10 229 960		0 229 960 1.	0 229 960 1	0 229 960	10 229 960	10 229 960	0 229 960 1		10 229 960 1		######
Time of disounting	0,50	0.50 1.50 2.50 3.50 4.50 5.50 6.50 7.50 8.50 9.50	2,50	3,50	4,50	5,50	6,50	7,50	8,50	9,50	10,50	11,50	12,50 13,50 14,50	13,50	14,50	15,50	16,50	17,50	18,50	19,50	20,50	21,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%			6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%
DCF to total capital	1 227 264	6 017 375	7 718 412	8 144 626	7 631 056	7 149 870	7718412 8144626 7631056 7149870 6699025 6276610	6 276 610	5 880 830	5 510 006	5 162 566	4 837 033	4 532 028	4 246 255	3 978 502	3 727 632	3 492 581	3 272 352	3 066 010	2 872 678	2 691 538 2	2 521 819
Sum of DCF to total capital 109 550 207	109 550 207																					

Vessel type: Suezmax Remaiding life: 20 years																						
USDm	2 014	2 015	2 016	2 017	2 015 2 016 2 017 2 018	2 019 2 020	2 020	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032	2 033	2 034	2 035
EBITDA	3 270 960	3 270 960 8 481 688 10 858 750 11 972 000 11 972 000 11 972 000 11 972 000 11 972 000 11 972 000 11 972 000 1	0 858 750	11 972 000	11 972 000	11 972 000	1 972 000 1	1 972 000 1	1 972 000 1	11 972 000 11 972 000		11 972 000 11 972 000		11 972 000 11 972 000	1 972 000 1	11 972 000 1	11 972 000 1	11 972 000 1	11 972 000 11 972 000		11 972 000	######
Time in operation	82,60%	84,50%	82,00%	%00'08	%00'08	%00.08	%00,08	%00.08	%00,08	%00.08	%00.08	%00'08	%00.08	%00'08	%00'08	%00'08	%00'08	%00.08	%00'08	%00.08	%00.08	%00.08
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000 2	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000 2	040 000
EBÎT	1 230 960	6 441 688	8 818 750	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000 9	9 932 000		9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	9 932 000	٠,	932 000
tax	36 929	193 251	264 563	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960	297 960		297 960
NOPLAT	1 194 031	6 248 437	8 554 188	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040 9	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040	9 634 040 9	634 040
Depreciation	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000 2	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	2 040 000	64	040 000
Salvage value																						######
Maintenance	1 457 623	457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623 1457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623		1 457 623	1 457 623	1 457 623	1 457 623 1	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	1 457 623	3 1 457 623 1	457 623	1 457 623	1 457 623
Change in working capital	0	0	0	0	0	0	0		0	0	0			0	0	0		0	0	0	0	0
CF to total capital	1 267 889	6 634 938	9 083 313 1	10 229 960	10 229 960	10 229 960 1	0 229 960 1	0 229 960 1	0 229 960 1		0 229 960 14		1 229 960 1	7 229 960 1.		0 229 960 1		10 229 960 1	0 229 960 1	096 677		######
Time of disounting	0,50	1,50	2,50	3,50	4,50	2,50 3,50 4,50 5,50 6,50 7,50 8,50	6,50	7,50	8,50	9,50	10,50	11,50	12,50	13,50	14,50	15,50 16,50			18,50	19,50	20,50	21,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%		6,73%		6,73%	6,73%		6,73%	6,73%		6,73%		6,73%	6,73%
DCF to total capital	1 227 264	6 017 375	7 718 412	8 144 626 7 631 056	7 631 056	7 149 870	7 149 870 6 699 025 6 276 610		5 880 830	5 510 006	5 162 566	4837033 4	4 532 028	4 246 255	3 978 502	3 727 632		3 272 352	3 066 010	2 872 678	2 691 538 2	2 521 819
Sum of DCF to total capital	109 550 207																					

Vessel type: VLCC Remaiding life: 21 years																						
USDm	2 014	2 015	2 016	2 017	2 018	2 019	2020	2 021		2 023	2 024	2 0 2 5		2 027	2 028	2 029	2 030	2 031	2 032	2 033	2 034	2 035
EBITDA	4 088 700	0.023813 1.	2 410 000 1	4 016 000 14	1 000 910 1	$4\ 016\ 000\ 1$	4 016 000 1	4 016 000 T	1016000 14	Г	14 016 000 I	4 016 000	14 016 000 14	Г	14 016 000 1.	14 016 000 15	14 016 000 1	14 016 000 1	14 016 000 1	4 016 000 14	14 016 000	######
Time in operation	82,60%	84,50%	82,00%	%00'08	%00.08	%00'08	%00.08	%00,08	%00'08 %00'08		%00'08 %00'08		%00'08		%00'08		80,00% 80,00%		%00'08	%00'08	%00.08	%00'08
Depreciation	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000 3		3 677 000		3 677 000 3 677 000		3 677 000 3 677 000		3 677 000		3 677 000	3 677 000	677 000 3	000 229
EBIT	411 700	6 346 813	8 733 000 10	0 339 000 10	339 000 10	339 000 10	0 339 000 1	0 339 000 10	339 000 10	10 339 000 10	10 339 000 10	10 339 000 10	10 339 000 10		10 339 000 10		10 339 000 1	10 339 000 1	10 339 000 1		10 339 000	#####
Tax	12 351	190 404	261 990	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170	310 170
NOPLAT	399 349	6 156 408 8	8 471 010 10	8 471 010 10 028 830 10 028 830 10 028 830 10 028 830 10 028 830	028 830 10	0 028 830 10	0 028 830 1	0 028 830 10	0 028 830 10	028 830 1	0 028 830 1	0 028 830 10	0 028 830 10	028 830 1	10 028 830 10	10 028 830 10	10 028 830 10 028 830	0 028 830 1	10 028 830 1	10 028 830 10		#####
Depreciation	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000 3 677 000	3 677 000	3 677 000	3 677 000 3 677 000 3 677 000 3 677 000	3 677 000	3 677 000	3 677 000	3 677 000 3 677 000	3 677 000	3 677 000	3 677 000	3 677 000 3 677 000 3 677 000 3 677 000 3 677 000		000 229
Salvage value																						######
Maintenance	2 026 882	2026882 2026882 2026882 2026882 2026882 2026882 2026882 2026882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882 2 026 882			2 026 882	2 026 882 2				2 026 882	2 2026882 2	026 882	2 2026882 2	026 882	026 882
Change in working capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CF to total capital	424 051	6 537 217	8 994 990 10	9 649 170 10	1 649 170 10	0 649 170 10	0 649 170 1.	0 649 170 18	0 649 170 10	0 649 170 1.	0 649 170 1	0 649 170 10	3 649 170 10	1 649 170 18	0 649 170 1.	0 649 170 1	0 649 170 1	0 649 170 1	0 649 170 1	0 649 170 10	649 170	######
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	7,50	8,50	9,50	10,50	11,50	12,50	13,50	14,50	15,50	16,50	17,50	18,50	19,50		21,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%		6,73%
DCF to total capital	410 464	410 464 5 928 750 7 643 362 8 478 382 7 943 766 7 442 862 6 973 542 6 533 817 6 121 818 5 735 799 5 374 121 5 035 248 4 717 744 4 420 261 4 141 535 3 880 385 3 635 703 3 406 449 3 191 651 2 990 397 2 801 833	7 643 362	8 478 382	7 943 766	7 442 862	6 973 542	6 533 817	5 121 818 5	5 735 799	5 374 121	5 035 248	4717744	1 420 261	4 141 535	3 880 385	3 635 703	3 406 449	3 191 651	2 990 397		2 625 160

Remaiding life: 21 years																						
USDm	2 014	2 015	2 016	2 017	2014 2015 2016 2017 2018 2019 2020	2 019	2 020	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032	2 033	2 034	2 035
EBITDA	4 088 700	10 023 813	12 410 000	14 016 000	14 016 000	14 016 000	4 088 700 10 023 813 12 410 000 14 016 000 14 016 000 14 016 000 14 016 000 14 0	16 000	4 016 000	14 016 000 14	14 016 000 14	ı		14 016 000 12	4 016 000 T)16 000	4016000 1.	016000	4 016 000	14 016 000 1	4 016 000	######
Time in operation	82,60%	84,50%	82,00%	%00.08	%00.08	%00'08	%00,08	%00.08	%00.08	%00.08				%00.08	%00'08	80,00%	%00,08	80,00%	%00.08	%00.08	%00'08	%00,08
Depreciation	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000 3 677 000 3 677 000 3 677 000 3 677 000	3 677 000	3 677 000		3 677 000 3		3 677 000	3 677 000	0 3 677 000 3 6	577 000	3 677 000 3	900 229	3 677 000	3 677 000		000 229
EBIT	411 700	6 346 813	8 733 000	10 339 000	10 339 000	10 339 000	10 339 000 1	0 339 000 1	0 339 000 1					339 000 10) 339 000 1k	339 000	0 339 000 16	339 000	0 339 000 1		10 339 000	#####
Tax	12 351	190 404	261 990	310 170	310 170	310 170	310 170	310 170	310 170					310 170	310 170	310 170	310 170	310 170	310 170			310 170
NOPLAT	399 349	6 156 408	8 471 010	10 028 830	10 028 830	10 028 830	10 028 830 10 028 830	0 028 830 1	0 028 830	0 028 830 10		_	0 028 830 10	0 028 830 10) 028 830 Te	028 830		_	0 028 830 1			######
Depreciation	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000 3 677 000 3 677 000 3 677 000 3 677 000			3 677 000	3 677 000 3	3 677 000 3		3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000	3 677 000 3	000 229
Salvage value																						######
Maintenance	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2 026 882	2026882 2026882 2026882 2026882 2026882 2026882 2026882	2 026 882	2 026 882	2 026 882 2	2 026 882 2	2 026 882 2		2 026 882	2 026 882		2 026 882		2 026 882		2 026 882 2	2 026 882
Change in working capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
CF to total capital	424 051	6 537 217	8 994 990	10 649 170	10 649 170	10 649 170	10 649 170 1	0 649 170 1	0 649 170 18	10 649 170 10 649 170	0 649 170 10	10 649 170 10	10 649 170 10	10 649 170 10	10 649 170 10	10 649 170 10	10 649 170 10	0 649 170	10 649 170 1	10 649 170 1	10 649 170	######
Time of disounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	7,50	8,50	9,50	10,50	11,50	12,50	13,50	14,50	15,50	16,50	17,50	18,50	19,50		21,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%		6,73%
DCF to total capital	410 464 5	928 750	5 928 750 7 643 362	8 478 382	7 943 766	7 442 862	7 643 362 8 478 382 7 943 766 7 442 862 6 973 542 6 533 817 6 121 818	6 533 817	6 121 818	5 735 799	5 374 121 5	-4	4717744 4		4 141 535	3 880 385	3 635 703	3 406 449	3 191 651	2 990 397	64	625 160
Sum of DCF to total capital 114 958 221	114 958 221																					

650
193 361
capital 1
total
OCF to
total 1
o uns

General compay cost																						
USDm	2 0 1 4	2 015	2 016	2 017	2 018	2 019	2020	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032	2 033	2 034	2 035
Administrative cost	1 800 000	1 836 000	1 872 720	1 910 174	1 948 378	1 987 345	2 027 092	2 067 634	2 108 987	2 151 167	2 194 190	2 238 074	2 282 835	2 328 492	2 375 062	2 422 563	2 471 014	2 520 435	2 570 843	2 622 260	2 674 705	2 728 199
Investment/depreciation	00'0	000	00'0	00'0	00'0	00'0	000	00'0		00'0	00'0	00'0	000	00'0	00'0	00'0	00'0	00'0	00'0	00'0	00'0	00.0
CF to total capital	1 800 000	1 836 000	1 872 720	1 910 174	1 948 378	1 987 345	2 027 092 2 067 634	2 067 634	2 108 987	2 151 167	2 194 190	2 238 074	2 282 835	2 328 492	2 375 062	2 422 563	2 471 014	2 520 435	2 570 843	2 622 260	2 674 705	2 728 199
Time of discounting	0,50	1,50	2,50	3,50	4,50	5,50	6,50	7,50		9,50	10,50	11,50	12,50	13,50	14,50	15,50	16,50	17,50	18,50	19,50	20,50	21,50
Factor of discounting	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%		6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%	6,73%
DCF to total capital	1 742 325	1 665 110	1 591 317	1 520 793	1 453 396	1 388 985	1 327 429	1 268 601	1 212 379	1 158 650	1 107 301	1 058 229	1 011 331	966 511	923 678	882 743	843 622	806 235	770 504	736 358	703 724	672 537
Sum of DCF to total conital	74 811 757																					